

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

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LONDON, SATURDAY, NOVEMBER 4, 1876.

[WITH SUPPLEMENT.] {PRICE ..... SIXPENCE }  
{PER ANNUM, BY POST, £1 4s. }

**MR. JAMES H. CROFTS, STOCK AND SHARE BROKER,**  
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.  
ESTABLISHED 1842.

Business transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Bonds (Foreign and Colonial), Railways, Miscellaneous, Insurance, Assurance, Telegraph, Shipping, Canal, Gas, Water, and Dock Shares.  
Business negotiated in Stocks and Shares not having a general market value.  
Business in COLLIERY and LEAD Shares, and in the principal WAGON and MANUFACTURING COMPANIES of the NORTH OF ENGLAND and SCOTLAND.  
Business in all the principal COTTON SPINNING Shares.  
Mr. J. H. CROFTS, having now established CORRESPONDING AGENCIES in all the Chief Towns of the United Kingdom, is prepared to deal in the various LOCAL Stocks and Shares at close market prices.  
Accounts opened for the Fortnightly Settlement.  
Monthly and Daily Price Lists issued.  
Bankers: City Bank, London; South Cornwall Bank, St. Austell.

**SPECIAL DEALINGS** in the following, or part:—  
25 Gt. West Van, 10s. 20 Penstruthal, 11s.  
10 Alhami, 14s. 6d. 10 Great Laxey, 10 Pateley Bridge, £3.  
10 Aberdaunt, 12s. 6d. 25 Glyn, £2 12s. 6d. 15 Richmond, £10 1/2.  
10 Ambleton, 18s. 9d. 15 I. X. L., £1 1s. 3d. 10 Roman Griv., £14.  
10 Bampfyde, 12s. 6d. 100 Javali, 11s. 3d. 50 Rookhope, 17s. 6d.  
10 Belstone, £2. 25 Llancrwst, £2 1/2. 20 Sweetland Creek, 6s. 3d.  
10 Bilson, £7 1/2. 10 Laves Chemical, £7 1/2. 5 Tankerville, £10 5s.  
10 Cathedral, 25s. 10 Marke Valley, 30s. 10 Thorpe Gawber, £3 1/2.  
10 Chapel House, £2 1/2. 10 Newport Aber., £5 1/2. 20 Van Consols, £2 1/2.  
10 Chapel Van, £2 1/2. 20 New Sharlston, Pref., 15 W. Tankerville, £1 14s.  
10 East Van, £2 1/2. 25 North Laxey, 14s. 5 West Chiverton, 20s.  
10 Emma, 12s. 6d. 25 Pestarena, 5s. 3d. 25 Wheel Grenville, 20s.  
10 Eberhard, 25s. 100 Parys Mount, 13s. 6d. 5 Wye Valley, £2.  
10 Exchequer, £2 1/2. 100 Parys Mount, 13s. 6d. 5 Wye Valley, £2.  
10 Flagstaff, 22s. 6d. 100 Parys Mount, 13s. 6d. 5 Wye Valley, £2.  
\* Shares sold for forward delivery (one, two, or three months) on deposit of 20 per cent.

**SPECIAL BUSINESS IN POSITIVE ASSURANCE SHARES.**  
Business on hand in all the principal TIN, COPPER, and LEAD Shares.

**AQUARIUM, HOTEL, AND MISCELLANEOUS SHARES.**  
SPECIAL BUSINESS.—FOR SALE, 20 Brighton Aquarium, £14 15s. 9d.; 10 Royal (Westminster), £2 5s.; 10 Royal Insurance, £16 1/2; 10 Scottish ditto; 15 Britannia Fire, 15s.; 10 Leobing Tea; 5 Darjeeling.  
WANTED—15 Milford Docks Shares (fully paid); 50 Richards and Co.; 15 Pel-  
mill; 10 Chillingham Iron.  
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

**COLLIERY SHARES.—SPECIAL BUSINESS IN ALLTAMI, BILSON AND CRUMP, CHAPEL HOUSE, CAKEMORE, CARDIFF AND SWANSEA, NEWPORT ABERCARN, NEW SHARLSTON, THORPE GAWBER, WEST MOSTYN (Ordinary and Preference), and Others.**  
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

**COTTON SPINNING SHARES.**—These steady and remunerative Securities (comparatively little known on the London Market, but largely invested in the manufacturing districts) can be bought at the present time at unusually favourable prices to pay good dividends on the capital invested. The following Shares (Oldham Mills) are amongst the safest and best of their class:—  
Name of Mill. Nom. amount. Last quarterly dividends. Closing quotations.  
Central Spinning ... £ 5 ... £2 10 0 ... 10 ... 20 ... 20 ... £ 3 1/2, £ 4  
Greenacres ... £ 5 ... £ 0 0 ... 10 ... 20 ... 20 ... 5 1/2, £ 6  
Grey Lane ... £ 50 ... Fully paid ... 30 ... 25 ... 25 ... 75, 80  
Beyton ... £ 5 ... £ 2 0 0 ... 35 ... 30 ... 20 ... 2 1/2, 3 1/2  
Shaw ... £ 5 ... £ 2 0 0 ... 35 ... 30 ... 20 ... 2 1/2, 3 1/2  
Star ... £ 5 ... £ 2 0 0 ... 35 ... 30 ... 20 ... 2 1/2, 3 1/2  
Twist ... £ 20 ... Fully paid ... 5 ... 32 ... 13 ... 20 1/2, 22 1/2  
Windsor ... £ 5 ... £ 2 0 0 ... 30 ... 27 ... 20 ... 3 1/2, 4, 4 1/2  
\* The accounts of all the above companies are made up and profits divided quarterly.  
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

**FOREIGN BONDS.—ARGENTINE.—EGYPTIAN.—RUSSIAN, SPANISH, TURKISH, SPECIAL BUSINESS, and latest information.**  
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

**RAILWAYS.—SPECIAL BUSINESS.** Fortnightly accounts opened on receipt of the usual cover.  
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

**LEADHILLS (LANARKSHIRE).—SPECIAL BUSINESS** in these Shares.  
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

**MR. WILLIAM H. BUMPUS, STOCK AND SHARE BROKER,**  
44, THREADNEEDLE STREET, LONDON, E.C.  
ESTABLISHED 1867.

**SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.**

Mr. BUMPUS directs particular attention to **MINING INVESTMENTS,** and is in a position to give reliable information and advice respecting the same.

\* The Shares of several sound Dividend and Progressive Mines may now be obtained at prices which are very much in favour of purchasers, and investments made at the present time in this direction will, in all probability, yield very satisfactory results within a comparatively short period. A carefully selected List of Shares, likely to have an early rise in market value, may be had on application.

**FOR SALE, at prices annexed:—**  
20 Argentine, 25 Frontino, £1 11-16. 40 Parys Mount, 14s. 3d.  
20 Blue Tent, 20 Great W. Van, 10s. 35 Penstruthal, 11s.  
20 Cedar Creek, 3s. 100 Gold Run, 3s. 20 Richmond, £10 5-16.  
20 Cedar Creek, 3s. 100 I. X. L., 21s. 3d. 15 Tankerville, £10 7-16.  
20 Derwent, £4 1/2. 20 Javali, 12s. 15 Van Consols, £2 1/2.  
20 Exchequer, £2 3-16. 10 Leobing Tea, £7 5-16. 20 W. Tankerville, £1 1/2.  
20 Pennerley, £1 5s. 6d.

**SPECIAL NOTICE.**  
THE THREE GREAT PRIZES FOR THE COMING YEAR:—  
ARGENTINE COMPANY (LIMITED).  
CHILE COMPANY (LIMITED).  
BLUE TENT HYDRAULIC GOLD MINES (LIMITED).

Capitalists and investors will do well to secure an interest in these valuable properties without delay, as the shares are certain to have a great rise. All the above are thoroughly sound and legitimate, not ephemeral schemes, but substantial undertakings which have had large amounts of capital judiciously spent upon them, and are commencing to yield good returns; each being managed by a responsible and practical directorate, and efficient officers. Those, therefore, who invest in the shares at present prices may confidently expect to make a large profit on their outlay, and receive handsome dividends at an early date. The eminently satisfactory report from these properties prove them to be no speculations, and they are doubtless afford an unusually favourable opportunity for the safe and profitable employment of capital. Full particulars of the mines, and every information concerning the several companies, may be obtained on application to Mr. BUMPUS, who has special facilities for dealing in the shares.

**WILLIAM HENRY BUMPUS, SWORN BROKER.**  
Business transacted in Stock Exchange Securities and Miscellaneous shares of every description. Fortnightly accounts opened. References given and required when necessary. A Stock and Share List forwarded free on application.  
BANKERS—THE NATIONAL PROVINCIAL BANK OF ENGLAND, E.C.

**FERDINAND R. KIRK, STOCKBROKER**  
5, BIRCHIN LANE, E.C.

**SPECIAL ATTENTION** directed to FOREIGN BONDS and RAILWAYS. Some unusual opportunities are now offering for sale or purchase. Fortnightly accounts opened on the usual terms.  
Bankers, London and Westminster, Lothbury.

Wherever a difficulty arises as to the price of any security, whether quoted or not, application should be made as above, when full particulars will be forwarded by return of post.

**WILLIAM B. COBB, STOCK AND SHARE BROKER,**  
62, CORNHILL, LONDON, E.C.  
BANKERS: The Alliance Bank.

Business transacted in every description of British and Foreign Stocks, Mining Shares, &c.  
Fortnightly accounts opened in rails, foreign stocks, and mining shares.  
VICTORIA (LONDON) MINING COMPANY (Limited).—£1 shares specially recommended, paying dividends at the rate of 18 per cent. per annum on present price.

### DIVIDEND LEAD MINE INVESTMENTS.

EVERY information respecting HOME and FOREIGN LEAD MINES and SHARES may be obtained of—

**MESSRS. PETER WATSON AND CO., STOCK AND SHARE DEALERS,**  
54, OLD BROAD STREET, LONDON, E.C.

### BRITISH AND FOREIGN (MONTHLY) MINING NEWS.

STOCK AND SHARE INVESTMENT NOTES—MINES, MINERALS, and METAL MARKETS—SHARE LIST,  
No. 778, Vol. XV., for October, 1876.  
Annual subscription, 5s.; single copy, 6d.

**MESSRS. PETER WATSON AND CO., STOCK AND SHARE DEALERS,**  
54, OLD BROAD STREET, LONDON, E.C.  
(Over the Bank of South Australia).  
BANKERS—THE ALLIANCE BANK (Limited).

### MR. ALFRED E. COOKE, STOCK AND SHARE DEALER,

76, OLD BROAD STREET, LONDON, E.C.  
(Established 1853.)

Transacts every description of Business in ENGLISH FUNDS, RAILWAY STOCKS and MISCELLANEOUS SHARES.  
SPECIAL ATTENTION GIVEN TO MINING ENTERPRISE.  
TRADING COMPANIES' SHARES (including COTTON SPINNING) dealt in at close prices.  
COLLIERY SHARES dealt in on best terms.  
SHARES IN NEGLECTED and DEPRESSED SECURITIES dealt in.  
Every description of STOCKS and SHARES, either for INVESTMENT or SPECULATION, BOUGHT and SOLD at net prices.

### MINES—LLANRWST AND ABERDAUNT SHARES.

SPECIAL BUSINESS AT LOWEST PRICES.

### MINES—LEADHILL SHARES. SPECIAL BUSINESS

and EXCLUSIVE INFORMATION.

### COPPER MINES—CATHEDRAL MINE, in the rich Gwynnapp

District. Full particulars, and SPECIAL BUSINESS.

### RAILWAYS, FOREIGN STOCKS, &c.—HOW TO ACT.

Speculative accounts opened on receipt of usual cover.

### INVESTMENTS—SAFE AND REMUNERATIVE.

Advice and information (based on experience) given.

ALFRED E. COOKE, 76, OLD BROAD STREET, LONDON.

### THE FOLLOWING SHARES (OR PART) FOR SALE AT

NET PRICES:—  
30 Aberdaunt, 15s. 50 Great West Van, 10s. 3 5 Pateley Bridge, £3.  
10 Argentine Gold, £2 1/2. 5 Great Laxey, 10 Pennant.  
40 Bampfyde, 12s. 6d. 5 Glyn, £2 1/2. 50 St. Patrick.  
50 Belstone, £2. 10 Grogwinion, £5 1/2. 15 Sweetland Creek, 6s.  
20 Blue Tent, 10 Javali, 12s. 6d. 5 Tankerville.  
20 Cathedral, new shares, 10 Llanrwst, 10s. 6d. 5 West Goginan.  
30 Cathedral, old shares, 5 Llanidloes, 5s. 5 West Wye Valley.  
15 Leadhills, 15s. 6d. 20 W. Grenville, 17s. 6d.

Where QUOTATIONS are NOT INSERTED, the LOWEST PRICE of the day WILL BE TAKEN.

SOME of the ABOVE may be PURCHASED for SETTLEMENT END of DECEMBER on PAYMENT of 20 per cent. on deposit.

ALFRED E. COOKE, 76, OLD BROAD STREET, LONDON.

### SPECIAL.—MR. COOKE having visited LEADHILLS MINES

during the week, the publication of the November number of the "Special Investment Circular" has been postponed until Monday next. Price One Shilling; gratis to clients and correspondents.

Edited and published by—  
MR. ALFRED E. COOKE,  
76, OLD BROAD STREET, LONDON, E.C.  
(Established 1853.)

### MR. JAMES STOCKER, STOCK AND SHARE BROKER,

2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.  
(Established 1848.)

BUSINESS transacted in all kinds of STOCK EXCHANGE SECURITIES, also in every description of BRITISH and FOREIGN MINING SHARES.

**SPECIAL BUSINESS** in the following:—  
BRITISH MINES.  
Leadhills, £7 8s. 9d. Pennerley, 25s. 9d. Cathedral, 20s.  
East Van, £8 1/2. Glyn, 53s. 9d. Rookhope, 17s. 6d.  
Great Laxey, Ladywell, 32s. Penstruthal, 11s. 6d.  
Clementina, £35. Van Consols, 41s. 1. X. L., 21s.  
Great Duffield, £4 1/2. Great West Van, 8s. 9d. Glenroy, £3 1/2.  
Pateley Bridge, £3 1s. Bampfyde, 12s. North Laxey, 14s. 6d.  
Grogwinion, £5 1/2. Marke Valley, 28s. 9d. 1. Parys Mountain, 13s. 6d.  
Tankerville, £10 1/2. Devon Consols, 61s. Wheal Grenville, £1 1/2.  
Roman Gravel, £13 1/2. West Chiverton, £19. West Tankerville, £1 1/2.

**FOREIGN MINES.**  
Exchequer, 41s. 6d. Frontino, 33s. 9d.  
Eberhard, £8 1/2. Argentine, £5 16s. 3d. I. X. L., 21s.  
Javali, 12s. Flagstaff, 20s. South Aurora, 6s. 9d.  
Malpas, 15s. 9d. Chontales, 8s. Cedar Creek, 10s.  
Malabar, 8s. 9d. Don Pedro, 3s. 6d. Port Phillip, 8s. 6d.  
Sweetland Creek, 4s. 9d. Santa Barbara, 45s. 9d. New Zealand Kapanga.

**COLLIERIES.**  
Bilson and Crump. Cardiff and Swansea. Chapel House.

**JAMES STOCKER, SWORN BROKER.**  
Consols, Foreign Bonds, Railways, Bank, Telegraph, Gas, and all miscellaneous Shares bought and sold, and fortnightly accounts opened for same. Shares sold for forward delivery on receipt of cover. List of prices and every information forwarded on application. References given and required when necessary.

BANKERS: LONDON AND WESTMINSTER.

### JOSEPH JOHN PYNE, MINING BROKER,

AND STOCK AND SHARE DEALER,  
6, BISHOPSGATE STREET LONDON, E.C.

Mr. PYNE having been connected with MINING ENTERPRISE for upwards of FOURTEEN YEARS, and having been a DIRECTOR of MINES in SHROPSHIRE, MONTGOMERYSHIRE, CARDIGANSHIRE, CARNARVONSHIRE, YORKSHIRE, and in VENEZUELA, has had great opportunities of becoming acquainted with this particular branch of industry, and will always be desirous of giving every information in his power to investors transacting business with him.

ALL DESCRIPTIONS OF SHARES are dealt in, including BRITISH and FOREIGN STOCKS, and RAILWAY SECURITIES.

BANKERS—THE ALLIANCE BANK (LIMITED).

### MESSRS. J. TAYLOR AND CO., 86, LONDON WALL,

LONDON, E.C.

MINING ENGINEERS and INSPECTORS, STOCK and SHARE DEALERS.

Have business in the following at close rates:—Cathedral, Devon Great Consols, East Van, Glyn, Great Laxey, Great West Van, Grogwinion, Llanrwst, Marke Valley, Minera, North Prince Patrick, North Laxey, Pennerley, Penstruthal, Roman Gravel, Rookhope, South Condurrow, Tankerville, Van, Van Consols, West Pateley Bridge, West Tankerville, Wye Valley.

### MESSRS. ARTHUR JONES AND CO., STOCK AND SHARE DEALERS,

No. 7, NEW BROAD STREET, LONDON, E.C.

Transact business in every description of British, Colonial, and Foreign Securities. Investors should read the "Investment Circular and Financial Record" which gives full particulars and reliable information concerning the whole circle of investments. Gratis and post free.

### MR. CHARLES THOMAS MINING AGENT, STOCK AND SHARE DEALER,

3, GREAT ST. HELEN'S, LONDON, E.C.

### MESSRS. A. W. THOMAS AND CO. MINING AGENTS, AND STOCK AND SHARE DEALERS.

"INVESTMENTS AND SPECULATIONS FOR 1876."  
Post free for six stamps.

Messrs. A. W. THOMAS and Co. have published a selection of what they consider the safest Dividend-paying and most promising Progressive Mines, which will be sent free upon application.  
BUYERS of West Chiverton, South Condurrow, West Godolphin, Minera, and Roman Gravel shares.

TO INVESTORS AND SHAREHOLDERS.

### GOLD SHARP AND CO. STOCK AND SHARE BROKERS, 42, POULTRY, LONDON, E.C.

Have the following SHARES for SALE in the undermentioned mines:—  
OFFERS CAN BE MADE, OR PRICES WILL BE FORWARDED.

40 ABERDAUNT ... (offer) LEAD. 200 PARYS MOUNTAIN ... COPPER  
50 ASHSTON ... do 200 PENSTRUTHAL ... TIN.  
200 BODIDRIS ... do 90 PATELEY BRIDGE ... LEAD.  
150 CENTRAL VAN ... do 100 PENNERLEY ... do  
100 EAST CHIVERTON ... do 200 PRINCE OF WALES ... COPPER.  
100 ELGAR ... do 100 ROOKHOPE ... LEAD.  
110 GLENROY ... do 150 SAINT PATRICK ... do  
100 GLYN ... do 100 TALLYBONT ... do  
200 GREAT DUFFIELD ... do 20 VAN ... do  
200 GREAT WEST VAN ... do 100 VAN CONSOLS ... do  
50 GROGWINION ... do 150 WEST GREAT WORK ... TIN.  
100 LEADHILLS ... do 100 WEST TANKERVILLE ... LEAD.  
50 LLANRWST ... (offer) do 100 WEST WYE VALLEY ... do  
200 MEDLYN MOOR ... TIN. 50 WHEAL CREBOR ... COPPER.  
50 MONYDD GORDDU ... LEAD. 50 WYE VALLEY ... LEAD.  
200 NORTH LAXEY ... do 100 WEST GOGINAN ... do  
N.B.—Some of the above will be sold under present market quotations.  
Established 1852. [Bankers: London and Westminster, Lothbury, E.C.]

### DIVIDENDS 4 TO 7 AND 10 PER CENT.

For Safe Dividend and other Investments—Read

**SHARP'S STOCK AND SHARE INVESTMENT CIRCULAR.**  
The NOVEMBER Edition Ready, 12 pages (post free).

Safe Investments in Railways, Preference and Debenture Stocks, American, Indian, Foreign, Colonial Stocks, &c., Bank, Telegraph, Tramway, Dock, Insurance, Tea, Gas, Shipping, Financial, Commercial, Mine, and Miscellaneous Stocks and Shares, &c.—Dividends Payable, Market Prices, Reports, &c., &c.

CAPITALISTS, SHAREHOLDERS, INVESTORS, TRUSTEES

will find this Investment Circular a valuable, trustworthy, and Safe Guide.

GOULD SHARP & CO., SHAREBROKERS, 42, POULTRY, LONDON, E.C.

Established 1852. [Bankers: London and Westminster, Lothbury, E.C.]

### TO SHAREHOLDERS.

**WEST CHIVERTON LEAD MINE, £18 10s. PER SHARE.**—  
WANTED TO PURCHASE, TWO HUNDRED SHARES, in small or large lots, in the above MINE, for cash.

Sellers will please state number to—  
GOULD SHARP & CO., SHAREBROKERS, 42, POULTRY, LONDON, E.C.

Established 1852. [Bankers: London and Westminster, Lothbury, London.]

### TO SHAREHOLDERS.

**GREAT LAXEY LEAD MINE, at £9 15s. PER SHARE.**—  
WANTED TO PURCHASE, TWO HUNDRED SHARES, in small or large lots, for cash.

Sellers will please state number to—  
GOULD SHARP & CO., SHAREBROKERS, 42, POULTRY, LONDON, E.C.

Established 1852. [Bankers: London and Westminster, Lothbury, London.]

### GROGWINION LEAD MINE (LIMITED).

**MESSRS. H. HALFORD AND CO., STOCK AND SHARE**

**BROKERS, of EXCHANGE CHAMBERS, CHANGE ALLEY, LOMBARD STREET, LONDON.**

Strongly recommend the ABOVE MINE as one of the BEST and SAFEST MINING INVESTMENTS. The dividends are declared half-yearly—the one for the last half year was 12 1/2 per cent.; the next one will probably be 20 per cent. The "reserves" are valued at £200,000. Every information upon application to the above.

Daily Closing Price Lists of Mines and all other Securities sent post free on application.

Messrs. H. H. and Co. are BUYERS of Shares in GROGWINION MINE, and also of Shares in WYE VALLEY LEAD MINE; and they will be GLAD TO HEAR from BROKERS or DEALERS who have ANY FOR SALE.

### NOTICE.

**BROKERS OR DEALERS HAVING SHARES FOR SALE**

in either GROGWINION or WYE VALLEY MINES can FIND IMMEDIATE PURCHASERS, on application to—

**H. HALFORD AND CO., STOCK AND SHARE BROKERS, EXCHANGE CHAMBERS, CHANGE ALLEY, LOMBARD STREET.**

### MR. EDWARD ASHMEAD, 62, CORNHILL, LONDON,

LONDON MINING AGENT, ACCOUNTANT, AND AUDITOR.

Purchases and Sales of Mining Shares effected, and information given on Mines and Mining personally or by letter. Mr. ASHMEAD has been constantly engaged in Mining since 1856. British Mining Stock, in good concerns, should be purchased now, prices being low. Home Securities will rise.

### MESSRS. A. ENDEAN, FISHER, AND CO., STOCK AND SHARE

**DEALERS, 3, LOMBARD COURT, LOMBARD STREET, E.C.**  
BANKERS: London and Westminster, Lothbury.

**LANRWST MINE.**—It is unnecessary for Brokers and Dealers to advertise these shares for sale at ridiculous prices, except for the means of decoy, as they are readily bought by—  
ENDEAN, FISHER, AND CO., of 3, LOMBARD COURT, E.C.

### ABERDAUNT LEAD MINE.—

ENDEAN, FISHER, AND CO., of 3, LOMBARD COURT, E.C., are BUYERS of ONE THOUSAND SHARES. Bona fide sellers need not advertise. The public would do well to be cautious of parties offering them at low prices.

### BODIDRIS LEAD MINING COMPANY (LIMITED).

Capital £20,000, in £1 shares.

Messrs. ENDEAN, FISHER, AND CO. call particular attention to the prospectus of this company now issued; they are confident it is one of the best, and most substantial undertakings placed before the public.

The present prospects, and the discoveries made, are guarantees of its future prosperity. Those who wish to invest in one of the prizes of the day should communicate with us at once. Prospectus and map forwarded on application.

ENDEAN, FISHER, AND CO., 3, LOMBARD COURT, LONDON, E.C.  
BANKERS: London and Westminster, Lothbury.

### MR. THOMAS THOMPSON, JUN., 1, PALMERSTON

**BUILDINGS, BISHOPSGATE STREET, LONDON, E.C.**  
Mr. THOMPSON strongly recommends the purchase of the shares of the CHAPEL HOUSE COLLIERY COMPANY (Limited) for investment. This company, notwithstanding the stagnation in trade, clears a profit of 2s. per ton on its coal, and when the new works are completed he present handsome returns will be much augmented.

**FOR SALE, lowest price, net cash:—**25 Flagstaff, 20s.; 30 North Laxey, 12s. 6d.; 25 Rookhope, 16s. 6d.; 25 Scottish Australian, 42s.; 15 Aberdaunt, 12s. 6d.; 10 Glyn, 52s. 6d.; 10 Grenville, 17s. 6d.; 100 Pestarena, 4s. 6d. Address, "X. X.", Mr. Barber, 15, Royal Exchange, London.

**PUMPING WORK.—HAYWARD TYLER AND CO. KEEP IN STOCK, and LET OUT ON HIRE, STEAM PUMPING MACHINERY, with BOILERS, suction and delivery pipes, &c., complete. STEAM PUMPS, in stock, suited for lifts, from 15 ft. to 500 ft. 84 AND 85, UPPER WHITECHURCH STREET, LONDON.**



## Royal School of Mines.

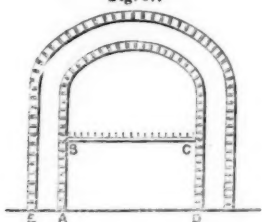
## PROF. SMYTH'S LECTURES ON MINING—No. LII.

[BY OUR SPECIAL REPORTER.]

There is one method of aiding natural ventilation by dividing the level which is common in metalliferous mines—the putting in of an "air sollar." The lower part of the level, in fact, is partitioned off by a floor; timbers being first laid across, after the manner of forming a regular roadway, then those covered by close fitting planks, and finally the whole made air tight by means of clay, or some such material. The air will then pass along this air sollar in one direction in the end, and in the reverse direction in the upper part of the level. In the thick coal of the Staffordshire district an "air-head" is driven—that is to say a small drift, generally not more than 2½ to 3 ft. by 3 or 4 ft., and small communicating passages cut through into the level, as is done when there are two parallel levels. In some cases this head is driven by the side of the level, but it is better, as proposed many years ago by Mr. Ryan, that it should be driven in the top of the seam, since in that case when you come to work the total height of the coal you can drain off into this top head the specifically lighter gases, including, therefore, the fire-damp; whereas with the head at the side the fire-damp is apt to accumulate along the top of the level. Mr. Ryan seemed to think his plan applicable in all cases, but there are very many cases in which it is quite impracticable. Mr. N. Wood's experiments showed what large volumes of air could be drawn through a mine by natural ventilation. In the great Hetton Colliery, under his management, 220,000 cubic feet of air per minute were passed, of which it was calculated that 100,000 feet were due to natural ventilation. In another instance, where the temperature at the bank was 43°, and the air in the downcast 45°, the return was 63°, so that there was a difference of 18°, which was found sufficient to give a circulation of 36,500 cubic feet per minute. There may, however, be many cases in which during the winter, when there is a great contrast between the temperature of the external air and that in the mine, there may be a great impelling force; at another season the temperature may be so much more equal that the current is checked, or stopped; and then it will be necessary either to apply artificial means or to stop the working for a time. There is another consideration still; if one district of a colliery is safe enough to be worked with naked lights, while another part is fiery and requires safety-lamps, as long as the current of air passes the naked lights first, then goes along the fiery district and directly into the upcast, all may be well. But if, owing to any cause, the ventilation be checked or reversed, then the fiery air will come in contact with the naked lights, and serious consequences very probably follow. In such a case it becomes absolutely necessary to provide artificial means for maintaining the current always in the proper direction. If the space from which the foul air is to be removed is very small, as, for example, a small side working, the men will very frequently "dust it out," occasionally with a cloth, or even with their jackets, agitate and thus mix and renew the air therein, and this may suffice if there be a good current passing close by.

With regard to the means for promoting artificial ventilation, we may first look to the method so very commonly employed in the collieries—the use of a furnace for the purpose of giving sufficient lightness to one column of air. The most simple way of doing this is what may be frequently seen in the midland districts—letting down a frame filled with burning coals into the upcast shaft. As this is usually lowered to only a small distance down the shaft, it follows that only a portion of the air is heated—that from the fire to the surface. A modification of this sometimes used is to connect the top of the upcast with a closed building (to which access is obtained by means of a double door, after the manner of a lock), in which is a fireplace connected with a stack. There are two objections to this latter method—that if the stack be small you will draw the current, and cannot expect to obtain so large a circulation as if the stack was of about the same diameter as the shaft. The second point is that the amount of heated air, measured by the height of the column, is comparatively a mere trifle compared with the depth of the shaft that it has to serve. This compares very unfavourably with the method of placing the furnace at the bottom of the shaft, where you have a large column of heated air, contrasting very powerfully with the weight of the column of cool air in the other shaft. Therefore, in most collieries where a brisk circulation is needed, they have seen the necessity for placing the fire at the bottom. You may see these fireplaces of all sizes, from that of an ordinary grate to a kitchen range, and some others of very large size. Take the case of a pit of not very large size in North Staffordshire, we shall find the furnace constructed (Fig. 37) of a straight

Fig. 37.



wall (A B, C D) 3 ft. high, then the firebars supported on a girder of iron, and above that an arch 3 ft. high, the breadth of the whole (A D) being 6 ft. This is inclosed in firebrick, and where special care is taken a second arch is built, leaving between the two an air space, through which the air may circulate, so as to prevent any danger of setting fire to the adjoining coals. Some serious accidents have occurred from the firing of the coal by the furnace, and great attention has been drawn to the matter. It is desirable to isolate the furnace as far as possible from the coal, and even from any dark carbonaceous shales which occur with the coal. In the large Clay Cross pits the furnace has a width of 9 ft. from wall to wall, the girder is put in at a height of 4 ft. 6 in., and there is a height of 5 ft. above the bars. As a rule 3 ft. beneath the bars appears to be sufficient. A fire of this kind well kept up is, perhaps, one of the most satisfactorily burning fires as regards the full consumption of the coal. In some cases, where the air comes in below the bars, the whole may be seen in a magnificent blaze, with not a particle of smoke coming away from it. To obtain a greater velocity through the furnace the upper portion of the arches may be bricked up, or it may be better to have a sheet of iron moving on slides in front, which can be slid up and down, and may be used to regulate the draught according to circumstances. If you have a large area to deal with you may either have several shafts, each with its own furnace, or you may have several furnaces playing into one shaft, as, for example, in Hetton Colliery three furnaces into a shaft 15 ft. diameter. The simplest plan of conveying the air to the furnace will be that of letting the return current pass directly along the drift through the furnace, part going over the fire, and part, perhaps, between the arches or through side passages, and so into the shaft; or part of the air may be led by a pipe which opens under the bars. But if the return air is foul, or likely to be suddenly fouled by blowers, then obviously you must not bring it into close proximity with this open flame. In such a case the return current will have to be divided, only a safe portion being led to feed the furnace, the rest being carried by what is called a "dumb drift" into the shaft, at a distance of at least 30 or 40 yards above the furnace, so as to be out of reach of sparks and flame. With a good ventilating furnace an average temperature of 150° to 160° Fahr. can be obtained in the upcast. Sir Goldsworthy Gurney, many years ago, in his endeavours to supersede the ventilating furnaces by his project of a steam-jet, raised several objections to the action of the furnace. For example, there was what he called the invisible brattice, and this can be observed in an ordinary kitchen fire, where if the chimney be too large, or the fire not properly proportioned to it, there will be a tendency for the air to steal down

the sides, and thus to check the heating of the shaft. Then he made a great deal of the furnace paradox, that you cannot readily get more than a certain effect out of a given furnace. Within certain limits there is a good deal in this argument; for instance, if you have a certain area of fire-bars burning a certain quantity of coal, beyond a certain point doubling the fuel will not give you double the effect; you will require considerably more than double the amount of coal to give you a double effect. But this can be very readily overcome, as by putting in a second furnace, or by having a larger area; or you may have a large compound furnace, as the one at Hetton Colliery, 26 ft. long. This furnace, introduced by Mr. Daglish, has a door at one extremity, which can be opened partially or fully, or closed entirely, according to the requirements of the feed; the air may be supplied by any of the methods mentioned above. At the side of the furnace are a number of doors, at which the men will usually be occupied. The advantage of this great length of fire-bars is this, that under ordinary circumstances you may require only a moderate amount to be covered with fire, but if dangerous weather comes on, if the barometer and thermometer indicate the approach of weather in which the evolution of the gas is more liable, or if on examining the works you find a quantity of gas present, you give orders at once for the fire to be increased, and this can be done to a very great extent by using more of the space afforded by the bars. And, again, with a small furnace, whenever it is necessary to clean it out the ventilation will necessarily be considerably checked, whereas with a long furnace you have only to rake the fire to another part while the first is being cleaned. The advantages connected with these large compound furnaces have caused several to be erected of late years, thus there is one in the Monkwearmouth Colliery 12 ft. square, and another large one has been erected in the mine in North Wales belonging to the British Iron Company. This latter has a width of 10 ft., the girder has a height of 1 ft., with 3 ft. below and 6 ft. above it, making the total height of the arch 10 ft. Besides the arch over the bars there is a small arch on each side, which runs round the furnace to the shaft, and then over the whole is a large arch of nearly 27 ft. across. The length of the bars is 16 ft., divided into four sets. The furnace is intended to be fed from each extremity, and in this case, as it ought to be in many cases, the furnace is fed with fresh air, "scale" of air equal to 30,000 ft. per minute being provided for the purpose. By the combustion of a suitable quantity of coal in this furnace a circulation equal to 220,000 cubic feet is obtained.

Sir Goldsworthy Gurney, besides stating these objections to the common furnace, proposed that it should be superseded by the use of a steam-jet, and he persuaded some gentlemen of both Houses of Parliament that this change would be so advantageous that it was endeavoured to make it compulsory to abandon the furnace and introduce the steam-jet. In the northern districts, however, many careful experiments were made, which resulted in showing that the steam-jet could not be employed except under peculiar circumstances, and with the combustion of an enormous quantity of fuel. There is no doubt that by a properly constructed furnace you get larger volumes of ventilating air than by any other method whatever. A pipe was carried and turned down the shaft, ending in a jet of ½ in. to ¾ in. diameter, and steam of high pressure was supplied, this tended to force the air down the shaft; at the other shaft a pipe was carried to the bottom, and the jet turned upwards, the steam thus tending to carry up the air with it, the jets acting as it were the part of pistons. A number of jets were employed instead of one where a greater effect was desired. In the experiments carried on in the North (which the lecturer had seen himself) showed that the quantity of air which could be got to pass into the upcast by any variation of the steam jet was very far surpassed by a furnace after it had been lighted for one hour only. Moreover, with the steam jet, two or three men at the fires could not fire fast enough, whereas one man, who is perhaps unfit for laborious work in other parts of the mine, may suffice to attend to the ventilating furnace.

Among other methods of ventilation we may look first at the system of falling water. The drops of water falling down a shaft have a more or less mechanical action in forcing the air down, and this principle may, under certain circumstances, come into play most advantageously. For example, in the case of an accident or explosion, or under other circumstances, when you cannot get down to light the furnace, the pumps may be allowed to run over, and the water to fall down the shaft, and by that means a good deal of air may be got down into the mine. But this method (the lecturer thought) has never been satisfactorily shown to be capable of throwing down a sufficient quantity of air for ventilation, and probably there are very few cases in which it would be desirable to adopt it. There are two or three methods of using waterfalls for forcing air (besides the employment of it to work a fan) which have met with great application. One of these is the *trompe* of the Pyrenees. The principle is briefly this—a stream of water falls through a vertical wooden pipe, in the sides of which are a number of oblique holes through which the air is drawn in by the falling water. The water falls into a barrel or box below, in which is placed a large stone or iron sheet to break up the column; there is an exit for the water in the lower part, and the level of the water is always kept above this. In the upper part the air collects and can be led off by a pipe from the top to the place where it is required. Another method is that of having a pipe laid to the bottom of the shaft, a conical piece pointing in the direction of the level where the air is to be conducted; a jet of water then playing into this conical piece (collected in an overflow vessel beyond) will carry the air through with it, and the air will pass forward into the level. This has been adopted at some of the Cornish mines, but it is not a method which can be used on a large scale.

## MANCHESTER GEOLOGICAL SOCIETY.

The annual meeting of members was held, on Tuesday, at the Literary and Philo-sophical Society, Manchester—Mr. J. DICKINSON, H.M. Inspector of Mines, occupying the chair.

Mr. J. E. FORBES, F.G.S. (the hon. secretary) read the report and financial statement for the past year. From the former it appeared that the receipts, including 44/ brought forward from last year, had amounted to 164/., and the expenditure to 155/., leaving a balance of 9/., due to the treasurer.

The report stated that as far as concerned the material condition of the society in respect to its body of members and finances it was in a satisfactory state. The number of members, after balancing the gains against the losses during the year, was practically unaltered from that of last year, whilst the invested fund had been increased from 500/ to 600/. Owing, however, to a heavier expenditure than usual, arising chiefly from the principal cost of printing in the preceding year being included in this year's bills, and the exceptional cost of new books and of geological maps, the outlay had exceeded the income. The council felt sure the society would concur with them that it was desirable to increase the library so far as the funds would allow by the purchase of standard works on geological and mining science, and especially on maps which would throw any information on the geology of Lancashire and Cheshire. The council regretted very much that they were not able to report to the members as favourably of the ordinary meetings in the session as was fortunately the case with their predecessors in 1875. It had been frequently complained of that members did not render the council that support which was essential to the life and vigour of a scientific society pursuing and studying a science, both with a practical and commercial, as well as with an intellectual, object. The council could not believe they were exceeding their proper duty if they reverted to the very favourable circumstances both in the condition and in the locality of the society, which had nearly all the conditions which ought to conduce to a more active state of scientific enquiry and work amongst its members. It was well known that many of the members were in an excellent position to contribute papers to the meetings, embracing their personal observations and practically acquired knowledge both on mining and geological matters, and the council wished to make an earnest appeal to the members who were engaged in the management and working of the coal and iron mines in South Lancashire—one of the most important and

busiest districts in the mining world—to give their attention to the claims of the society and aid the council to provide papers of interest for the meetings of the members, so that the omission which they had at present to lament might not recur at the future meetings of the members. The council also regretted that from circumstances of an urgent nature in business the meetings of the members had been held without the presence of the President upon any one occasion, and they still more had to regret that so few papers on subjects for discussion had been brought forward during last session, even in sciences so fertile in new discoveries and theoretical views as geology and mining. In the last report the council felt it necessary to draw attention to the action of the Senate of the Owens College in their manner of carrying out the articles of agreement with reference to the Geological Museum, and they regretted that the conditions for gaining admission to the Museum were neither in the spirit nor the letter of the agreement. This was a matter which they hoped their successors would not lose sight of, but that they would be able to report at the next meeting that a proper rendering of the agreement had been adopted by the Owens College. On the motion of Mr. HARDWICK, seconded by Mr. GRIMSHAW, the report was received and adopted. The Treasurer's report was also presented, and, together with the report of the council, was approved.

Officers for the ensuing year were appointed as follows:—President, Prof. W. Boyd Dawkins, F.R.S., F.G.S. Vice-Presidents: The Hon. A. Egerton, M.P., Lord Gerard, Mr. Oliver Heywood, and Mr. G. Ferrelay Smith, F.G.S. Ex-officio Vice-Presidents: Mr. James Heywood, F.R.S.; Mr. G. W. Ormerod, F.G.S.; Mr. E. W. Binney, F.R.S.; Sir J. P. Kay-Shuttleworth, Bart.; Mr. J. Dickinson, F.G.S.; Mr. A. Knowles; Mr. G. C. Grenwell; Mr. J. Aitkin, F.G.S.; Mr. J. Knowles, M.I.C.E.; Mr. Thos. Knowles, M.P.; Prof. W. Boyd Dawkins; Mr. Clifford Smith. Treasurer: Mr. H. M. Ormerod, F.G.S. Secretaries: Mr. J. E. Forbes, F.G.S.; and Mr. J. S. Martin. Council: Messrs. H. H. Bolton; R. D. Darbishire, F.G.S.; Ralph Fletcher, jun.; G. C. Grenwell; C. Hardwick; J. Higson; W. H. Johnson, B.Sc.; G. Peace; J. Plant, F.G.S.; J. F. Seddon; A. W. Waters; and G. Wild.—The usual votes of thanks were passed, and the CHAIRMAN having announced that the President (Prof. Dawkins) had promised a paper on the Sub-Wealden Explorations, which he had no doubt would be of considerable interest, the proceedings terminated.

## THE BRISTOL COAL FIELD.

In last week's Journal, when recording the proceedings of the Bristol Mining School, we briefly noticed the very elaborate paper of Mr. Handel Cosham on the Bristol Coal Field, the first of the course of lectures by practical engineers and colliery managers, arranged to be given during the season to the students of the School and gentlemen connected with local mining and manufacturing industries.

Mr. COSHAM expressed his opinion that the Bristol coal field, the Dean Forest coal field, and the Welsh coal field, though now miles apart, were at one time one basin, the division being caused by various upheavals and depressions of the strata, extending over vast periods of time. The same characteristics of the strata were observable in each field, the lower series consisting of white ash coal, especially valuable in the manufacture of iron on account of its freedom from sulphur, and which was followed by valuable seams of fire coal. This was succeeded by smith's coal, above which came the pennant, and above that beds of bituminous gas-producing coal. The Bristol field embraced an area of about 150,000 acres, of which less than 50 square miles were exposed to view, and probably contained 6,000,000,000 tons of coal yet to be worked, and as during the last 250 years they had only taken out 120,000,000 tons, it would appear that unless the generation that succeeded had more energy than the present the world must be 4000 or 5000 years older before the store was exhausted. The school, the students of which he had the honour of addressing, had turned out distinguished men in the past, and he hoped it would turn out more in the future. The speaker went on to define the boundaries of the Bristol field, and said that it was almost divided into two portions in the centre by an anticlinal axis running east and west between Bristol on the west and Wick on the east. They would observe by the map that at these points on both sides the basin had been pushed nearly one mile into itself on each side, the result of which had been to cause the centre of the field between these points to lift up at least 3000 ft., giving a northern dip to the strata on the one side and a southern dip to the strata on the other side of the anticlinal line.

The field contained 45 seams of coal, with an aggregate thickness of 90 ft., and extending through strata 8000 ft. in depth, the seams differing greatly in thickness and character. Thus they had veins at some places 12 to 13 yards apart, and in others they would form one vein. There were also great variations in thickness and quality. The speaker next referred to the wide range of geological research afforded by the field, saying that the geology of nearly all the world could be studied by studying that of the Bristol district, and explained in detail the position, &c., of the various deposits in the field. The "faults" or dislocations of strata of the field were next dwelt on. Some of the most remarkable of these were to be found on the sides of the Mendips, in the neighbourhood of Radstock and Vobster. For the explanation of these faults they were deeply indebted to Mr. G. C. Grenwell and Mr. J. McMurtrie. Here they could distinctly see the dislocation caused by the elevation of the Mendips. The disturbance at Vobster was such that the seams were forced into a vertical position, whilst at Radstock the upper seams were folded over each other, thus giving that place a double length of the same vein. There was a very distinct fault to be seen in a cutting on the Midland Railway branch line near Bitton Station, where there was a drop to the east of at least 600 ft., bringing the Lias and New Red Sandstone opposite the pennant, and which fault seemed to have stopped mining enterprise many miles south and east. Faults at Ovet and Kingswood were next explained, and an opinion expressed that the future explorations in the Kingswood field would completely unfold that intricate district. Faults were often very difficult and expensive things to deal with, but much expense would be saved if the direction of the forces by which they were caused were carefully studied. Mr. Cosham then spoke of the value of the pennant as a means of determining the position of the seams of coal, as by careful attention to their dip the position of the coal seams could be ascertained.

Mr. Cosham then proceeded:—I am now anxious to call your attention to a fact that I think may hereafter turn out to be of vast importance to this coal field, and that I think has not been previously noticed. The pennant rock has hitherto been considered, and in fact is to a large extent, the watershed of the district. It seems to catch all the drainage of the surrounding country and put it upon any unfortunate man of enterprise who tries to sink through it without mercy, and certainly without stint. The experience of sinking in the pennant has hitherto been only on the outcrop of the formation, and there the experience has been as I have described. I believe my firm is the first who have ventured either by tunnelling or sinking to deal with the pennant towards the centre of the field and the centre of the pennant deposit, and I confess that it was with some fear and trembling that I ventured to pierce the watery strata at a depth of 250 yards, where, as everyone knows, it is expensive and difficult to deal with large feeders of water. I do not pretend that my experience yet is conclusive of the theory I am about to propound—that the pennant rock while very siliceous and jointly near the outcrop and for some distance down, and full of water, becomes less siliceous and more argillaceous in the deep, more close in texture, and almost impervious to water. At any rate, I have already sunk over 50 yards, and tunnelled 250 yards below the upper series of coal veins, on what I think ought to be hard watery pennant strata, and which at the outcrop I believed would be so. But I have found in it red mottled argillaceous ground, with here and there bands of close grained stone, but no water, and I almost begin to think whether I shall not solve a problem which may prove of immense benefit in the development of this coal field by showing that it may be possible to sink through the pennant to the lower series in the deep without the risk that has heretofore been supposed to attend sinking through this formation. I have about 15 or 20 yards more to reach the level which I wish to carry out new south pit, and if I am as successful in this portion as I have



been in that I have already passed through I shall feel that a great problem has been solved relative to the future development of the coal field. The overlie of the secondary rocks in the Bristol coal field is one of the greatest difficulties to deal with in mining operations in this district. The overlie of the secondary geological formation concerns the greater part of the coal field from view. Out of the 200 square miles, which, as I have told you, is about the area of the coal field, some 190 square miles is unexposed, and the existence of the coal strata below has to be conjectured and inferred. There are few districts in the world from which the coal measures are reached at greater depths below the surface through overlying strata than in this field, several of the Somersetshire pits having passed through the whole of the Lias and New Red formations, the greatest thickness of the New Red proved in the field I believe to have been about 70 yards, near Compton Dando. Four-fifths of the Bristol coal field is covered with a mantle of New Red of variable thickness, and there can be no doubt that this, coupled with the powerful rival that the South Wales coal field must always prove to our more limited area, has hitherto retarded the development of mining enterprise in the district.

A very remarkable phenomenon occurs near Holcombe, and from there to Mells, for not only are there two very remarkable patches of mountain limestone to be found there overlying the coal measures without interfering with the regularity of strata below, and which, therefore, must have been topped over from the great mass of the same rock that forms the Mendip Ridge, a mile to the south, when that ridge was uplifted, but there has also been a most remarkable thinning out of the Secondary rocks in the district, so that at Mells the inferior Oolite lies only a few yards in thickness, resting (of course, unconformably) on the coal measures, the whole of the Lias and the New Red having been denuded off an anticlinal ridge that runs through that district. I know of no other case in England, and probably none in the world, in which such a fact occurs, and it may give rise to the hope that many as yet unknown ridges may exist under the Secondary, and even under the cretaceous formations, where coal measures may be met with at less depths than could be expected from a superficial view of the surface deposit. This fact opens up a wide subject for geological speculation and enquiry. I have often thought the great land proprietors of the East and South of England would do wisely to combine for the purpose of carrying out some half-dozen or dozen trial borings in various districts through the Secondary and upper deposits, and if these borings were fixed upon by Prof. Romney, at the end of our geological survey, and carried out under eminent practical engineers, the result could hardly fail to add to the value of property and the general wealth of the nation.

Following up these suggestions, let me now call your attention very briefly to the question whether the coal field probably extends beyond our present known boundary. It is an important question, and one that may largely affect the future of our district and country, and it is worthy of note that every investigation we make into our mineral resources seems to extend our ideas of future supply, and to give us hope that our population will not be starved, nor our manufacturing or steam-power crippled for many generations yet for want of fuel. I believe the districts around this coal field will prove no exception. On the west of Patchway and Over I have already shown you that there are geological indications, amounting almost to positive proofs, that the coal field repeats itself to the west under the Severn, and probably extends south to the flat and step Holmes. Then, south of the Mendip range, I can see no possible geological reason why coal should not be found. All along the north flank of that range the seams are as thick, the coal as good in quality, and the beds as numerous as in any part of the coal field; and, as I have already shown, the Mendip chain has been uplifted since that coal field was formed, and was, in fact, protruded through the coal measures. It seems almost impossible to suppose that the coal measures did not pass over, and now, probably, be embedded, deep as it may be, but still within reach, below the peat deposits of Glastonbury and the greater part of Mid-Somerset. This is a large question, and requires much more time than I may have at disposal fully to argue out the *pros* and *cons*. Then, on the eastern side, near Wickwar, there is a patch of mountain limestone, discovered by the late Mr. H. Saunders, dipping to the east, showing either the presence of a fault, of which there is no surface indication, or, what is more probable, the result of an anticlinal in the limestone of that district, as at Patchway on the west and the Mendip range on the south, giving indication that the coal strata passed over the eastern side of the limestone ridge and away on the east—who knows where and how far? I have no objection to hazard the opinion, and you may take it for what it is worth, that it extends from there with, no doubt, certain intermission from thence to the coal fields of France and Belgium on the east, and probably under most of the newer formations of the east and south of England. I am not one of those, therefore, who share the fear that the whole of our coal deposits will soon be exhausted.

At some future time I shall have no objection to give you in detail the facts and arguments on which I base the opinion that coal will yet be found under a great portion of the South-East of England. A few remarks on the general formation of our coal basins will, I think, show you that I am not visionary in the opinion I have ventured to express. Our present knowledge of our own coal field, and especially the Welsh and Forest coal fields, show that they exist in basin form—that is, in vast hollows like inland lakes, and though more than half the area of the known coal fields of England are, like our own, basin shaped. Now, what does this basin-face of our coal fields indicate? Why, that prior to the deposition of the Permian, New Red, and later deposits, the whole of the carboniferous and Palaeozoic strata was thrown into vast anticlinal and synclinal folds, resulting either from upheavals or depressions of the earth's crust, possibly also from the shrinkage of certain portions, and the crumpling of other portions by lateral pressure. Then, still, prior to the deposition of the Secondary rocks, vast floods swept over the uneven surface of the globe, denuding, as in the case of the Mendip range, thousands of feet from the upheaved ridges, leaving only the moderate elevation that we now see. Let your thoughts range over a globe thus swept and denuded after the deposit of the coal measures and prior to the deposition of the Secondary formation, and you have the best and most accurate idea than can be given of what actually took place, and you have also the causes from which the basin-shaped form of our coal fields has sprung.

Allow me now to summarise these sources of our coal field as compared with the mineral resources of the country generally. Taking the Coal Commissioners' report of 1871 as the basis of my calculations, I estimate our coal field to contain about 1-17th of the fuel of our country, for, while the whole of our coal fields are supposed to have one hundred thousand million tons of coal yet to work, we are supposed to have six thousand million tons yet undeveloped; we ought, therefore, to be raising 1-17th of the fuel of the country at the present time, instead of which, while the whole country is raising perhaps 125,000,000 tons a year, the Bristol coal field only turns out 250,000 tons a year, considerably more than one-fifth of which I am proud to say the firm to which I belong brings to the surface. It follows, therefore, that with 1-17th of the mineral resources of the country we only provide 1-100th part of the fuel of the nation, thus showing there is room for enterprise and capital in the Bristol coal field, and I will also venture to add, for mining skill and talent such as I hope this School will help to develop and send out. I have, I fear, challenged your attention at too great length on a subject which I need hardly say is deeply interesting to me. I feel that so much of our future as a country depends on the wise development and economical use of our fuel that I can hardly feel that our attention can be too frequently called to our coal fields and our mineral resources. Like all the gifts of Jehovah, coal is given to the world with no niggardly hand. The formation of that coal is the result of a wisdom higher than our own. The place it occupies in the geological range of the crust is also the result of Divine providence. The upheavals and depression that have brought it within reach in certain districts, and preserved it for future use in others, have been the result of a power that only a Divine hand can wield. But to us has been assigned the honour of developing and bringing out for the use of the human race these vast resources that have thus been stored by infinite wisdom, goodness, and power. It may

be, and no doubt is, only a small and humble part that we have to play in the matter, but let us play that part skillfully, and do our best to secure at the least cost, and with the least risk to life and limb, those treasures that a gracious Providence has provided, and thus I believe even the industries and daily duties of life may be made to minister to the growth both of intellect and heart, for while our intellect will be sharpened by the study of mining enterprise, and the application of science and machinery thereto, our higher nature may also be cultivated by feeling that while primarily working for our own profit and advantage, yet that our efforts and skill are helping to build up the national greatness, and minister to the comfort and wealth of thousands of the human race other than those engaged in mining pursuits.

The Chairman moved a vote of thanks to Mr. Cosham for his practical and eloquent lecture. They must all have listened to it with great interest, and especially to the future of the district he had mapped out. It was comforting to know that they had plenty of coal left, and he was sure they would be glad to hear it. (Applause.) He hoped that what Mr. Cosham had said might help to allay the panic that existed in some minds upon that subject. He trusted that the anticipations he had formed of the future of the Bristol coal district would be realised, and that capital and enterprise would be attracted to the district. He reminded his hearers that Mr. Cosham had done much for that School. They were aware that the School last year came under the management of the Clifton Trust, and soon after they assumed the reins of power Mr. Cosham, with that anxiety which he always showed for the purpose of scientific education—(applause)—laid before the governors a plan for the resuscitation of the Mining School. The governors accordingly re-opened the School, and he was glad to say that students had resorted to it in quite as large numbers as they expected. He believed he was right in saying that it was already one of the most important mining schools in the country outside London. (Applause.) They had resolved also to resuscitate the lectures by eminent practical men, and they had to thank Mr. Cosham for kindly giving the first. (Applause.) As long as 20 years ago Mr. Cosham took great interest in the School, and assisted Mr. Herbert Mackworth in starting it, so that he might say he was the founder of the school. They also had to thank him for so kindly throwing open his works to the students, so that they might obtain practical insight into the working of mines. He expressed a hope that the School would continue to turn out men who would do credit to it and to the city. (Applause.)—Mr. H. Bennett seconded the motion, which was carried with acclamation.—Mr. Cosham, in acknowledging the compliment, said he thought more of these schools should be established, so that students might obtain good practical knowledge without being put to the expense of going to London to get it.—A cordial vote of thanks was passed to the Chairman.

#### THE NORTH LINCOLNSHIRE MINING DISTRICT.

The members of the North Staffordshire Institute of Mining and Mechanical Engineers have had their second excursion of the season, when they paid a visit to Frodingham, North Lincolnshire. That district has only been known as an iron-producing district for the past 15 years, during which time its development has been exceedingly rapid. Frodingham, the centre of the district, is situated on the Manchester, Sheffield, and Lincolnshire Railway, which connects it with the ports of Hull and Grimsby.

From a paper prepared by Mr. George Dove, jun., and submitted to the Iron and Steel Institute at their recent meeting in Leeds, it appears there are now 21 blast-furnaces in the district, of which nine are in blast and 12 are out of blast. The following firms also work mines and convey the stone to their several works:—The Parkgate Iron Company (Limited), Staveley Coal and Iron Company (Limited), and Messrs. W. Cooke and Co., of Sheffield. The bed of stone is covered by varying thickness of drift sand, constantly being shifted about by high winds, so that the agricultural value of the surface is very low indeed; in fact, before the discovery of the ironstone, the country in and about Frodingham was little better than barren moorland, and the village itself but a small hamlet. It is now rapidly extending itself; the price of land for all purposes has enormously increased; and Frodingham seems destined before long to assume the appearance and size of a busy town. The bed, which is almost entirely free from faults, inclines gently to the east, but where it is now being worked, at and within 1½ mile from the outcrop, the amount of "baring" required is very small, in no place exceeding 3 ft. The labour employed in winning the stone is of the commonest and the most unskilled description, blasting only being required in getting the stronger portions of the bed; the whole operation is simply one of quarrying. The deposit is not of very regular formation. It consists of bands of stone—some consolidated, others unconsolidated—of various appearances, mechanical conditions, and compositions, which are again broken up by bands of ferruginous limestone of varying thicknesses. The average quantity of iron in the stone, rejecting all the inferior bands, is 28.71; of manganese, 1.75; and of lime, 12.8 per cent. The chief difficulty encountered in the smelting of the stone is the control of the amount of lime in the charge, which is, unless the stone be very carefully selected, liable to become excessive, and disorganisation of the furnace the result. So great has the difficulty been experienced in the selection of the stone that it has been found advantageous to introduce a certain proportion of ore from other districts for use as a mixture, and the ore that is now in general use, in proportions varying from one-eighth to a quarter, is obtained from Lincoln. The analyses of this stone show it to contain 42.64 per cent. of metallic iron. By its use the care required in the selection of the native stone is lessened; yet that by proper selection of the Frodingham stone it is not necessary to use any mixture is proved by the fact that the Frodingham stone is now and has been smelted for years without any addition of other stone or fluxing material whatever. Another difficulty is the amount of moisture present, which in wet seasons becomes very high. At present all the stone is used in its raw state, but it seems very likely that by the adoption of suitable means of drying or calcining before putting it into the furnace great advantages would result. The fuel employed at the various works is mainly obtained from the Durham district, one firm alone getting its supply from South Yorkshire, though it is only within the last three years that this north country coke has come so extensively into use. The question is simply a commercial one. Respecting the iron made, it is mainly in demand for forge purposes, the manufacture of bars, tin-plates, and wire. For the last-named purpose it is in peculiar request, and it appears that its adaptability is owing to the manganese it contains. As a foundry iron it is singularly fluid, and well adapted for mixing with Cleveland, for which purpose it is now being extensively used as a substitute for Scotch. In 1866 the total quantity of iron made in the district was 13,765 tons; in 1870 it had increased to 31,690 tons; while in the year 1875 the quantity had still further increased to 110,000 tons. The yearly quantities of stone raised and consumed show correspondingly large increases—from 2000 tons in 1859 to 626,627 tons in 1875. Taking the field generally, there is no doubt that it contains a valuable and practically inexhaustible supply of stone, from which a high-class iron for special purposes can be made; that the difficulties attending its varying chemical composition and character by careful selection can be removed, and a uniform mixture obtained for the furnace; and also that, by the adoption of suitable means, the excessive moisture might be got rid of, and uniformity also established in this particular. The whole question of success or non-success in the smelting of the stone turns upon this matter of selection—upon the proper mixture of the materials required to produce a fluid cinder. With this proper selection of the stone understood, and the means of carrying it out, there is not at the present time any more difficulty in handling it in the furnace than in treating the more regular stones of other districts; while, with these conditions, the results will compare more favourably for Lincolnshire, both commercially and in respect to the quality of the iron produced.

The excursionists, numbering upwards of 50, proceeded by special train, leaving the Potteries early in the morning, picking up members at the various stations en route, the last calling-place being Godley

Junction, where the members were joined by the President of the Institute, Mr. Daniel Adamson, of Hyde Junction, who is Chairman of the North Lincolnshire Iron Company, at whose works at Frodingham they were met by Mr. Tosh, the managing director, the train proceeding there along a siding. After partaking of some refreshments in the office of the company, the visitors were conducted through the works. This company have four furnaces 20 ft. in diameter and 60 ft. in height, and the blast is supplied by three vertical engines of 550-horse power collectively. There are 23 pumping and other steam engines, slag-breakers, and mortar-mills spread over a considerable length, the steam being carried by 13 boilers. The first furnace was built in 1865; the second in 1872; the other two in 1875. The blast is heated by 23 hot-blast stoves, but only two of the furnaces are at present in blast, and they are capable of producing 300 tons of pig-iron per week. The works are laid out on the newest principle, the machinery being exceedingly fine. After inspecting them the visitors proceeded to one of the quarries, and were surprised at the wonderful thickness of the face of the stone, and the ease with which it can be procured as compared with the recovery of the thin seams at great depths underground in North Staffordshire.

By the time the quarry had been visited the party had to re-assemble, and proceed to the Blue Bell Inn, Scunthorpe, for luncheon. According to the programme, they were to have visited several of the other works in the immediate neighbourhood, the owners of which were most willing to show all that was to be seen, and hospitably entertain their visitors into the bargain. However, owing to an unfortunate accident to two luggage trains at Crowden Station in the morning, by which the line was blocked a considerable time, the special train was 2½ hours late in arriving at Frodingham, thus materially shortening the time to be spent there. A portion of the members did inspect the works of Messrs. Cliff, the Frodingham Iron Company, and were highly pleased with what they saw there.

At the luncheon the chair was taken by Mr. ADAMSON, and the vice-chairs by Mr. J. H. GODDARD (Longton) and Mr. G. BARKER (Kilgobrow). After the repast the loyal toasts were honoured. Mr. GODDARD then proposed as the next toast "The Ironmasters of North Lincolnshire." (Applause.) Staffordshire people prided themselves on their courtesy and hospitality; but after their reception that day they must pale their faces before the men of North Lincolnshire. They were deeply indebted to the ironmasters of North Lincolnshire for their kindness to them in so readily showing them their works, and he hoped that what they had seen that day would lead them to ponder over the subject and consider what they were to do to "hold their own." Although North Staffordshire was an old iron district, North Lincolnshire was before it in many things; and he had no doubt many of the visitors that day would take advantage of what they had seen, and try to compete with others. Considering that at Frodingham there was an immense thickness of ironstone—in some places 14 ft. thick—on the surface, while in North Staffordshire they had to go 300 or 400 yards deep to recover seams, some of which were only 18 in. thick, it would be difficult for the North Staffordshire ironmasters to maintain their ground. (Hear, hear.) The toast was drunk with much heartiness.—Mr. TOSH, in responding, said that the ironmasters of North Lincolnshire felt highly honoured by the visit of the Institute. While North Lincolnshire was in its infancy as an iron district, Staffordshire was one of the oldest and largest iron districts in the kingdom. He hoped, with reference to those who were comprised in the toast, that their knowledge would grow with their years. (Hear, hear.) Ten or twelve years ago that district was a rabbit warren. Five or six years ago, when some Staffordshire men came to work in the district, they would sometimes leave their work to catch rabbits, and he might say that two of the sharpest poachers who came to the district were Staffordshire men. (Laughter, and hear, hear.) But now they had disposed of their rabbits and were turning their attention to the production of pigs, an occupation which he hoped would be remunerative to themselves and beneficial to the country. (Hear, hear.)—Mr. CLIFF also responded, and then proposed "Success to the North Staffordshire Institute of Engineers."—Mr. ADAMSON, in responding, said that the Institute was a prosperous one, and although it had only been in existence a period of little less than four years, it numbered upwards of 350 members, and he pointed out that visits to other districts would make them wiser men, and enable them to advance with the times, promote their own interests, and increase the riches of those around them. (Hear, hear.) If the North Lincolnshire ironmasters visited North Staffordshire, he was sure from his knowledge of the district the works there would be thrown open, and there would be readiness to communicate any information which might be required. (Hear, hear.) North Staffordshire possessed an abundance of the best description of minerals, and an unlimited supply of fuel, and was able to hold its own against the world. He observed that the ironmasters of North Lincolnshire would not object if by perseverance and increased skill some vigorous individuals in that district would, as the Duke of Sutherland had done at Lightwood, sink a pit through the Permian and Red Sandstone rocks, and by that means enable them to obtain coke at 2s. a ton less than they were now able to procure it. (Hear, hear.) Mr. Adamson then proposed "Success to Kindred Institutions," coupling with it the name of Mr. Cooper, of London, who, he said, was associated with old George Stephenson in originating the Institute of Mechanical Engineers, and Mr. Marshall the secretary of that Institute.—The toast having been honoured, Mr. COOPER responded. He said that five men, including old George Stephenson and himself, started the Institute of Mechanical Engineers, and he made some observations as to the practical utility of that and kindred societies.—Mr. MARSHALL also responded.—Mr. HOPKINSON (Chairman of the Chatterley Company) then, in terms of eulogy, proposed the health of the President, who, he said, was associated not only with the North Staffordshire Institute, but the North Lincolnshire Ironmasters and the Institute of Mechanical Engineers.—The toast was drunk with musical honours.—The President then, in a few genial remarks, expressed his regret that his predecessor as the President of the North Staffordshire Institute (Mr. C. J. Homer) was unable to be present. He then spoke of the eminence of members of the Iron trade in Staffordshire, and the excellence of their manufactures, which, he said, were known throughout the world, and he trusted that the time would come when steps would be taken for erecting a monument of old Cort in that county. As he had said before, Staffordshire had a high class of ironstone, which yielded a large quantity of iron in proportion to the weight of stone, and they had an abundance of fuel. If they would put plenty of work into it, they might hold their position against the world.—The health of Mr. Rowland Wynn, M.P., Lord of the Manor of Frodingham, was then drunk, Mr. ROSEBY responding; and this concluded the list of toasts.—The homeward journey was a very tedious one, the train not reaching the Potteries till nearly eleven o'clock at night.—*Staffordshire Advertiser.*

#### METALLURGICAL PATENTS IN VICTORIA.

We have been favoured by the Registrar-General of Victoria (Mr. RICHARD GIBBS) with a copy of the newly-published volume of abstracts of specifications of patents relating to metals applied for from 1854 to 1866 (London: Trübner and Co., Ludgate Hill), which to gold miners will be particularly interesting, since it contains the Victorian patents taken in the years mentioned for crushing, and crushing and extracting the gold from its ores. In 1857 a new crushing machine was patented by Mr. Frederic Froeschel. The crusher consists of a body of the shape of a wheel from 10 feet to 20 feet in diameter, and from 5 feet to 10 feet in breadth; the framework is in wood, &c., covered with deals or plates or sheets of any material. The interior must be filled with stones, &c., so as to give the whole body the greatest possible weight. The curve of the lower part must be covered with bars or sheets of iron. This machine must rest on a fixed or moveable bottom of iron, stone, or any other hard body which will allow the quartz to be crushed by the oscillating motion communicated to it. This oscillating crusher can be put very easily into motion, as all the parts of it are in equilibrium; it is only necessary to change the position of the centre of gravity to make it oscillate; this is effected by simply attaching a rope, chain, or bar, to the top of the crusher and pulling it to and fro—this can, of course, be worked by any power.

An invention dated 1860, and described as Phillips's Muller Hammer, will be recognised as one introduced much more recently in this country as a new invention. The subject of the patent consists in combining the percussive and molar actions, and varying each from day to day according to the nature of the material to be treated, the parts being mainly a frame revolving horizontally, and carrying any desirable number of rubbing hammers made of iron or other material, such frame and hammers working on and in a circular trough containing annular segments of iron or other metal of such wedged form and thickness as shall produce any desired fall and abrasion; the trough to contain either water or mercury, or both or neither, as circumstances may enforce, and to have holes for spiking to the ground with a discharging rim-channel. The advantages of the machine are its combined actions, its adaptability to any place and motive-power, the power varying in the same machine from that of one man to six—a steam-engine being employed for several together of similar size and construction, its portability, compactness, and readiness either for shifting or for action.

A peculiar motion is embodied in the invention of Mr. John Don, who, in 1864, proposed a crushing machine mounted on staging some 30 ft. high, and having a muller weighing about 10 tons. The lever or pendulum is 25 ft. long, with a balance-weight of 10 tons attached to it. The machine is kept in motion by swinging the pendulum to and fro by hand by means of a rope attached to the end of the lever. By the motion of the lever the muller rolls from



side to side in the basin. By this means the stuff is crushed to the finest powder, as it has to rise up in the water to the height of 18 in. from the bottom of the basin before it can get away. He proposes to load the lever with some cheap material—such as granite or any other heavy stone. The machine is also to drive a pump by means of a pump attached to the main shaft. The 200 years old invention of crushing minerals by shooting them out of a gun or cannon against a strong resisting surface was patented in 1864 by Mr. A. C. L. De Lacy, who combines with it a chlorination process, which is not of course so antique as the gun-trick system of crushing, because chlorine was not discovered so early as guns and cannons.

The last invention noticed in the volume is that of Messrs. Barratt and Costin. The stamps of the crushing machine are raised by endless chains passing over rollers, and having studs the length of the stroke apart. These studs are grasped by a clutch, which opens when the stamp is elevated to the full height, or the stamp is raised by short cams to the required position by two or more successive lifts, or the cam is made in the form of a toothed segment, which works into a rack upon the shaft of the stamper, the toothed segment being followed by a blank space, so as to admit of the fall of the stamp. The cam is also made to act upon the end of a lever by downward pressure, and lifts the stamper by a chain attached to the opposite end of the lever.

The volume is illustrated by photo-lithographs of the drawings attached to the specifications, so that the exact nature of the invention can be readily understood. Few of the inventions, however, are new to English miners, and as ten years have elapsed since the last referred to in the volume, still fewer are at present in practical use. As a record of what has been done the work will prove very valuable, both in preventing the repetition of errors and in pointing out where improvements are required.

#### MINING AND STOCK EXCHANGE NEWS OF THE WEEK.

Messrs. F. W. MANSELL and Co. (Sworn Stock and Share Brokers), Pinner's Hall, Old Broad-street, write to us as follows:—

**SILVER MOUNTAIN MINES—EXCHEQUER, I. X. L. ISABELLE, &c. (No. 11).—**The traveller from New York to the Pacific Coast has the choice of four American "trunk lines," which connect with the Great Trans-Continental Railroad at Council Bluffs or Omaha. These four lines are the New York Central and Hudson River, the Erie, the Pennsylvania Central, and the Baltimore and Ohio. Omaha occupies an exceedingly beautiful situation, bold and commanding. Approaching this city from the east the broad valley of the Missouri river first comes into view, then the great iron bridge which spans the river is plainly visible. Behind it, looking to the west, is Omaha. This is the grand gateway through which the western tide of travel is passing in search of what may be found either for amusement, pleasure, or profit on the plains, mountains, and the Pacific. It is the resting place for those who are weary of continuous travel, and has sufficient attractions to render a visit profitable and interesting. Omaha in 1865 did not have a single manufacturing establishment; in 1875 her manufacturing employed over 2000 men. Here are located the largest smelting and refining works in America, the Omaha Smelting Works, employing 135 men, transacting an annual business of \$4,000,000. Here is the eastern terminus of the Union and Central Pacific Railroad—the longest railway in the world, laid the most miles of track in one day, cost the most money, passes over the broadest plains, the finest grazing lands, and the loftiest mountains; near barren deserts, and the most fertile valleys. It possesses the most valuable lands, the highest bridges, and the largest snow sheds. It affords views of scenery the most grand, the mountains are towering and snow capped, the chasms are deep and fearful, while the engineering skill displayed is truly wonderful. Near to this great trans-continental highway are the richest gold, silver, iron, coal, sulphur, and other mines in the known world. The line rises the highest into the clouds, and terminates the farthest from land, over the waters, on the longest pier. It possesses the most rolling stock, and the most costly and luxurious drawing-room and sleeping cars. On the line of the road wild game of every variety are abundant, from the prairie dog to the buffalo and grizzly bear.

The Western country can no longer be spoken of as the "Far West," as that land is generally conceded to lie near sundown, or at least beyond the Rocky Mountains. Nebraska, so lately opened up to the world, and so lately considered one portion of the "Wild West," forms now one of the Central States. The "Far West" of to-day has become removed from the West of 30 or even 10 years ago, and what is now the central portion of the commonwealth of the Union was then not only the far but, to a certain extent, the unknown West. A rich, powerful, and popular section, comprising three States, has arisen where but a few years since the Jesuit missions among the savages were the only marks of civilisation. All over the once unknown waste, amid the cosy valley and the broad plains, are the scattered homes of the hardy and brave pioneer, while the bleak mountains, once the home of the savage and wild beast, the deep gulches and gloomy canyons, are illuminated with the perpetual fires of the smelting furnace, the ring of pick, shovel, and drill, the clatter of stamps and booming of blasts, all telling of the presence of the miner, and that the streams of wealth which are daily flowing into the world's coffers are rapidly increasing. Numerous are the mining centres between Omaha and Reno, but it is sufficient for our present purpose to inform the traveller bound for Silver Mountain that Reno, nearly 3000 miles from New York, and 290 from San Francisco, is the junction of the Virginia and Truckee Railroad, by which the Comstock Mines are reached. Reno, which has an elevation of nearly 5000 ft., is about nine miles from the Peavine mining district, which is rapidly increasing in importance, from the fact that silver and gold veins are worked yielding as much as \$900 per ton. The ores are admitted on all hands to be the best worked on the Pacific Coast, and treated successfully only by the O'Hara process.

From midway between Reno and Virginia City, at a point known as Carson City, Silver Mountain is reached by a mountain road, the distance being about 50 miles through Genoa, Markleville, Silver Creek Canyon, &c. Along this route stand out the grand old monuments of Nature's rearing, the world-renowned mountain chains of the Californian Sierras. As a mining region Alpine County has many advantages. Most prominent among its mining districts is Silver Mountain and Monitor, which in the days that are past were the scenes of busy and active life. Like many other mining localities in both California and Nevada, there have been many difficulties to contend with, and which for many reasons have been prolonged to an extent that is unwarrantable and inexcusable in many instances.

Within Alpine County, and passing through four of the mining districts, is a vast mineral belt about eight miles in width, with a general yet well-defined course, northerly and southerly, and in the aggregate about 12 or 14 miles in length. The most casual observer, in passing through this belt, cannot fail noticing its boldness and magnitude, while the studious mining advocate and scientist will immediately observe its perfect adaptation for mineral purposes; and a careful examination reveals the varied and prominent evidences of the mineral wealth here exposed. Among many American geological authorities who have visited Silver Mountain we find the names of Prof. Whitney, Prof. Raymond, and the late Mr. J. Ross Browne, who, in the course of their statistical investigation, pay Silver Mountain a high tribute. The suggestions and directions of these acknowledged and experienced scientists regarding deeper working and an abandonment of the tunnel system were, until recently, unheeded, and for years Alpine County has been subjected to the worse than useless evidences of primitive conception in the form of surface tunnels, driven at a cost of thousands of dollars, when advantageous sites could be obtained for hoisting-works and permanent shafts. Fortunately, however, the days of tunneling are over, and now, as in the Comstock Mines, is inaugurated the system that should have been adopted at the time of the discovery and occupancy of these districts. Had this course been pursued heretofore the Silver Mountain Mines would now be adding a substantial quota to the vast mineral productions of the Pacific Coast, and Alpine County second to none as a region of mineral wealth. The interest manifested by the Advance and Flint Companies of

Monitor, and the success of the Exchequer and other mines of Silver Mountain, has incited to action many other mineowners and prospectors. The universal opinion is that from the present memorable year an era of prosperity and success will have dawned greater than ever before realised since the earliest discovery of this important belt.

Among the many difficulties has been hitherto the lack of proper and economical roasting furnaces for the successful reduction of the ores. Worthless articles of many description, and bearing numerous titles, have been foisted upon the mining public as the one great thing needed. Expensive in erection, and worthless in action, they have tended to paralyse the interests to a greater degree than, perhaps, anything else the district has been compelled to contend with. It is self-evident to anyone that sufficient caution was not observed by those whose duty called them to the front, else these visionary monuments of uselessness would never have been erected. Medium results have been obtained by even raw amalgamation, and when a furnace or process not too expensive in working is shown to the public that will thoroughly and successfully treat the ores, no doubt can possibly be entertained regarding ultimate results from either quantity or quality. We believe that the O'Hara furnace will most completely terminate this battle with the baser metals, and once obtained the future, as a bullion-producing region, is assured. The lodes are massive and well defined, and with the aid of well directed capital, furnished with one-fourth the uniformity exhibited on the Comstock, not only one but hundreds of the lodes within this vast mineral belt will prove conclusively to the promoters of such efforts that their labours will not have been in vain.

**EXCHEQUER AND I. X. L.**—Our reports upon these mines, submitted to the special meetings, embrace such information as we hope will be of interest to the shareholders. If there be any point upon which additional information is required it will be our pleasure to supply it forthwith. This week's advices from Exchequer announce that the cross-cut in the 400—the present deepest point of operation was in 494 ft., and just into the casing of the lode. The north drift in the 300 is in 268 ft., and there is some fine ore in the face. The stopes in the 200 are looking well. The 140 is also looking well. The I. X. L. advices state that the north drift in the 200 had been driven 20 ft. during the week, and in 231 ft. in fair working ground, and good vein matter. The south drift from the lower tunnel is in 19 ft. from the main track—there is good ore in the face and back. Great progress is being made at the mill.

**ISABELLE (Gold and Silver).**—In immediate proximity to the I. X. L. Mine is an extensive and advantageously located group of proved mines acquired by the Isabelle Company. Even in this remarkable mineral region these properties form a striking feature. This is one of the properties we had a special object in visiting, the directors, no less than ourselves, being most desirous that before entrusting us with its financial direction we should satisfy ourselves on the spot as to its merits. We have satisfied ourselves upon this point, and at the proper time shall have no hesitation in recommending it to the Exchequer and I. X. L. shareholders, who as such will be offered an advantage.

**CALIFORNIA (COMSTOCK MINE).**—While in Virginia City we had the opportunity to examine into the condition and prospects of this great mine, in importance second only to the Consolidated Virginia, which it adjoins. We find that at the commencement of the present fiscal year (Jan. 19), the California Mine was in debt to the Nevada Bank in the sum of \$28,248. During the quarter ending June 30 the product of the mine, as reported to the assessor of Storey County, was 29,000 tons, valued at about \$4,519,000, or an average of \$155 per ton. Since then the mine has been turning out at the rate of 2500 to 3500 tons of ore per week. The bullion product to date has been as follows, together with the dividends paid:—

	Bullion.	Dividend.
May .....	\$1,609,500 .....	\$1,089,000 .....
June .....	1,478,000 .....	1,080,000 .....
July .....	1,402,000 .....	1,080,000 .....
August .....	2,062,400 .....	1,080,000 .....
September .....	1,793,700 .....	1,080,000 .....
Total .....	\$8,345,600 .....	\$5,409,000 .....

The receipts are to Sept. 4, and the dividend to Sept. 16. The difference between the two amounts is \$2,945,600. How much of this sum has gone to pay expenses is not known. We do not think the expenses for this period have averaged over \$350,000 per month. The case may, therefore, be stated thus—

Bullion produced, April 4 to Sept. 4 .....	\$8,345,600
Estimated expenses .....	\$1,750,000
Overdrawn, Jan. 18 .....	28,248
Dividends to Sept. 16 .....	5,409,000 = 7,178,300
Probable surplus .....	\$1,267,300
Receipts, Sept. 9 to Sept. 26 .....	863,200
Total .....	\$2,073,500

According to this the company have already over \$2,000,000 to pay the current month's expenses and dividend, with another week's bullion returns to be added. Such are the profitable results now being returned from one of the Comstock mines.

**DERWENT LEAD MINES.**—Of all the principal lead mining properties in which the public have had an opportunity of investing in the last few years none are more important and valuable than the DERWENT, which is situated on the borders of Durham and Northumberland, the richest lead district in the kingdom. These mines have been at work for many years, and though hitherto carried on upon a very limited scale, with little or no capital, are said to have yielded lead ore to the amount of 1,000,000 lb., and to have given large profits. They have lately passed as a going concern into the hands of an influential company, with a nominal capital of 48,000 lb., the whole of which is subscribed for. Already nearly 150 persons are employed in vigorously pushing on new works, which are leading to, and will lead to further discoveries of value, which, in the words of a well-known practical and successful authority, are "sure to bring this celebrated old mine forward into high rank in the district." The mines are as yet quite in their infancy, the three shafts being down only about 90 fms. each, and there being about 800 fms. in length on the lodes (of which there are at least three productive ones) untouched to surface. But even more important still, the deepest point is only down to the top of the great limestone, which is the sill or strata in which the other large mines in the district are the richest. In fact, Derwent is a splendid property, is just deep enough to enter the first of the series of richer sills, and will ultimately be developed into a very great and lasting property. Magnificent runs of ore hundreds of fathoms in length have been the rule in Derwent above the great limestone, and it may safely be said that as the mine is deepened, and they get down to the great whin sill, the lodes will be found more productive than at any previous period in the working of the mines. There is a large plant of machinery, and everything is being done to enable the operations to be carried on as efficiently and economically as possible, the facilities and advantages for the same being unusually good. Regular monthly returns are being made, and these will before long be considerably increased. We believe that this is the only public Lead Mining Company that has secured the freehold of the minerals (the price to be paid for which is included in the above capital), thus saving immensely by the non-payment of dues or royalties, and being subject to no conditions or restrictions as to working, &c. This is a most important consideration, seeing the many thousands per annum paid to lessors by other large companies, whose holdings are only for a comparatively few years, while Derwent will, in fact, hold their mineral property in perpetuity. The company is in 12,000 shares of 4l. each, and those who may wish to learn further particulars will find them in the fifth edition of Mr. Murchison's pamphlet on "British Lead Mines," just published.

**WHEEL GRENVILLE.**—The sale of tin on Wednesday last, with the 11 tons of copper ore sold on the following day, about meet the labour cost and merchants' bills to Oct. 7. It is currently reported that a very satisfactory balance-sheet will be presented to the shareholders shortly, in anticipation of the next general meeting; and, as there is ever probability of the returns of tin being kept up, the

shareholders may congratulate themselves on the fact that they have in their hands a valuable property, and well managed.

**GREEN HURTH.**—The erection of lead ore dressing machinery at this mine may now be said to be completed, and is doing excellent work. It is not generally known that "house," or crushing mill work has been gradually accumulating for a couple of years or more, in anticipation of the erection of machinery to crush and otherwise prepare it for market by jiggling machines, Zenner's buddles, &c. The quantity ready and now being operated upon is estimated at upwards of 400 tons, and its value as it lays is about 12l. per ton. A shaft has been sunk from the surface at the extreme extent of the working on the veins by the adit level, and thus the mine is thoroughly ventilated. A set of pumps is placed in this shaft, and connected by means of a wire-rope to one of the water-wheels, by means of which a great saving is effected over the cost of pumping by hand labour. The shaft will be sunk deeper, to undercut the rich courses of ore that have been driven over and left in the soles of the adit and incline levels. The stopes and ends of the various workings in the mine are producing ore well and opening ground for future stopping works. A new east and west vein has recently been discovered in driving on No. 2 north and south vein. It is a very powerful vein, and so far as seen is likely to be very productive both east and west,—going east it will intersect the vein at the old mine, called Boder Mea, which has been under water for above 20 years, and where it is known that a very profitable mine was left by old miners being driven away by the want of ventilation and increase of water. It will be seen by these few remarks that the cloud which has appeared to some to hang over this property is gradually but most surely being lifted away, and that the question of the resumption of dividends will only be interfered with by the difficulty there is in working this and all other lead mines in frosty weather, and not for the want of lead ore; as quite independent of the accumulation at surface before named the mine is working to a good profit.

**BEDFORD UNITED.**—At the meeting convened for next week it is anticipated that a small call will be necessary to meet the requirements of the mine. In the accounts furnished to the shareholders every known liability is shown, and there is evidence that the returns of copper ore will be increased for the future. The mine is looking well, especially in the 127 fm. level, and operations are about to be resumed on the south lode.

**BELSTONE.**—The reports from this mine continue very satisfactory. The cross-cut at the 80 fm. level is being continued, and although more than 40 ft. have been driven since the lode was intersected at this depth, the south or footwall has not yet been reached. Rich yellow ore is daily being raised from this point, and also from the 80 level east, which has been commenced on the course of the lode, the strata here being most favourable for the production of ore, and it is reported, giving almost certain promise of large returns when extended beyond the influence of the cross-course. The stopes in the 40 fathom level are said to have very much improved during the last few weeks, another rich deposit of black ore having been met with. There seems little doubt that this unusually large lode would, if extensively worked at these upper levels, be found to contain numerous deposits of this black ore, which would probably pay handsomely for working, as the produce is very good, but inasmuch as the great wealth of this property is supposed to be in depth, the proprietors have acted with commendable prudence in concentrating their efforts upon the intersection and exploration of the lode in the 80 fm. level, where there is now every appearance that a successful future is assured.

**WEST GOGINAN (Lead).**—The following telegram has been received from Mr. J. Kitch:—Mine greatly improved, both in the winze below the 12 and in the 24 west. Several of the largest shareholders have just visited the mine, and carefully inspected it, the result of their visit proving most satisfactory.

**EXCHEQUER GOLD AND SILVER MINE.**—The lucid and straightforward report of Messrs. Mansell and Parrick, with regard to the present position and future prospects of this company's property, shows clearly that the shareholders possess a mine which only requires to be properly developed to enable it to take a very high rank amongst the American dividend-paying mines. The ore, which is of similar formation to that in its great neighbour the Comstock Lode, increases in richness as greater depth is attained, and in this respect it shares the experience of the adjacent Consolidated Virginian Mine, with this favourable additional feature—that while the percentage of gold increases the silver shows no sign of falling off. While the two gentlemen named above were on the property the richest ore was kept under lock and key at the mine, pending removal to the mill, the reason for this being that some time since specimens of this rich ore were taken away by passing miners, and the specimens so abstracted were used by those worthless to "salt" other mines in the neighbourhood, and they actually succeeded in selling other adjacent properties on this company's rich specimens. An enormous quantity of lower grade ore is exposed as the development of the mine progresses. It is believed that the O'Hara furnace, from which such good results are anticipated, is at work at the present time, and the advices regarding its capabilities will be looked forward to with great interest, not only by the shareholders of the company, but also by other miners in the neighbourhood, who, if they find the furnace successful, will no doubt avail themselves of the same efficient mode of treating the ore.

**I. X. L. MINE.**—Amongst the other mines in the district Messrs. Mansell and Parrick carefully examined the I. X. L., and their report places the property in a very favourable light. The quantity of available ore now opened up is estimated, at a moderate calculation, at 45,000 tons, which at 50l. per ton will give 450,000l. The I. X. L. has a slight advantage over the Exchequer in being situated lower down the mountain, and the miners can sooner get into settled ground; the mill site is also nearer the mine, thus saving a considerable cost in haulage. There is strong evidence that a rich bonanza of ore existed in the upper workings immediately below the surface, and it is also believed that the deeper workings will come under this rich bonanza by February next. The shareholders of the I. X. L., and also of the Exchequer, are fortunate in having as manager a gentleman of the high character and position of Mr. Chalmers. For many years past Mr. Chalmers has been known in the district as a most expert miner, and also a thoroughly trustworthy and reliable man, and the directors have at different times received from perfectly independent eye-witnesses the most gratifying testimony as to the skill and energy of Mr. Chalmers in the management of the great properties committed to his charge.

**THE ALMADA AND TIRITO MINES.**—We would draw the attention of our readers to the very interesting reports published in the Journal this day relative to the mines of this company. The Tirito Mine, after having passed through a poor zone of felspathic rock, is now at the 42 fm. level beginning to turn out very rich petanque and grey copper and silver ores, ranging from \$400 to \$500 and up \$1300 per ton, and 19 per cent. of copper. A winze is being rapidly sunk from the 32 to the 42 in similar kind of ore, though not solid, which is about 25 fms. north of the discovery in the 42; the water has been drained from this winze from the operations at the lower level. The containing rock at the 42 is porphyry, showing the formation to be open igneous character, and, therefore, likely to last in depth. Above the Tunnel level in Tirito the New East lode is intersected that it will form upwards towards the surface for 40 fms. from the Tunnel level. No other important feature in the improvement in the Dios Padre Mine at the Tunnel level, where ore has been cut, producing \$180 per ton. Important news may shortly be expected from the Mina Grande Mine, where the shaft has been completed to 24 fms. below the Tunnel, and a cross-cut to the lode has been commenced. When it is stated that the containing rock of these mines are all igneous, such as diorite, porphyry, granite, and syenite, and it is remembered that the Comstock, and others of the best silver mines in Mexico, the United States, and Hungary are



also in similar rocks, a great future may be expected for the Almada and Tinto Mines.

## Original Correspondence.

### JAVALI MINE.

SIR,—Some years ago I was instructed by a large holder of shares in this mine to survey it, which I accordingly did, and was surprised at the enormous amount of riches; in fact, in my report I stated that the quartz, very highly mineralised, was inexhaustible, and was sure to turn out a prize; but at the same time I said that the management at the mine (at that time) was not all that could be wished; that there was great waste, lack of water, and difficulty about labour; but when those drawbacks were removed, and with proper machinery, the mine must pay. I am glad at last to see that I was right; for now, with an energetic and clever manager, good machinery, and plenty of water, a good balance at the bank, and a profit of over 1000*l.* a month, the Javali Mine cannot but take its proper position, and with the machinery and labour it may yet be a second St. John del Rey. This, Mr. Editor, is my opinion.—Nov. 2.

MINING AGENT.

### NEW QUEBRADA MINING COMPANY.

SIR,—Can any of your readers inform me what is doing at the Quebrada Mines? Some little time ago it was reported that a cargo of ore had arrived, but no official information has ever been vouchsafed as to whether it has arrived, or if so, what was its value, or any particulars whatever. The only thing we do know is that the price of our shares fell 25 per cent. in value, and all sorts of rumours have been since in circulation. The present board succeeded to office five years ago, mainly upon the assurance that above all they would keep the shareholders fully informed as to the progress at the mines. How far they have done so may be discovered by asking anyone how the railway is progressing. You will be told that nobody knows. No information is ever given, and although the railway ought to have been finished six months ago, any official information about it has not been given for more than twelve months. As to the mines, no report upon their condition, the extent and nature of the workings, the amount of reserves, if any, has been given since this board was elected. Is it any wonder, then, that a number of dealers in the Stock Exchange laugh at the simplicity of anyone believing in either a mine or a railway?

"Railway about finished?" said a large dealer to me the other day. "No; the railway never will be finished. It is never intended to be finished." Is it any wonder our shares remain at the present price, and why is it? Simply because, perhaps with one exception, there is not a man on the board who was ever in a mine or connected with the building or making of a railway. Honourable men, no doubt, although I question if their names were ever heard or known by a tenth of the shareholders.

I was one of those who supported the election of Mr. Hemming, feeling assured we would have continuous and certain information on every point. But what a change! He has become completely muzzled since he joined the board. Why is this? Has he forgotten his promises, or is it the old difference of being in office and out of office? I can assure him the many shareholders who supported him and elected him as a director have not forgotten them. He knows when agitation was so rife, years ago, that he was always supported because he promised that not only would he push matters on, but he would not hesitate to speak out, whatever the results were. As yet, we have not heard much from him. If he wishes to retain his position and credit it will not be by such action.

I would like to know is the railway finished, or if not, how long will it be, and what is the reason it is not? What is the condition of the mines? What are the reserves like? Can the railway be supplied from the present workings if it is ready for working? What was the yield of the last cargo of ore? When will there be another? These are questions which everybody asks, and no one can get the information. Will the board deign to publish some answer?

A SHAREHOLDER.

(For remainder of Original Correspondence see this day's Supplement.)

## Meetings of Public Companies.

### SCOTTISH AUSTRALIAN MINING COMPANY.

The half-yearly general meeting of shareholders was held at the City Terminus Hotel, yesterday.—Mr. ADOLPHUS WILLIAM YOUNG, M.P. (the Chairman of the company), presiding.

Mr. CHARLES GRAINGER (the secretary of the company) read the notice convening the meeting, and the directors' report was taken as read.

The CHAIRMAN observed that he was happy to meet the shareholders with a report which he believed must prove satisfactory to them. They would observe that the Lambton Colliery continued to be the principal source of the company's profit, and as long as it continued to produce so well they had every reason to be well satisfied with it. Although English coal and freights had continued very low, and English orders for Australian coal for Eastern ports had, therefore, been slack, the colonial trade had kept up well, and this company had had a fair share of it, 85,485 tons having been sold by them during the half-year. He might state that a comparison of the half-years ending June 30, 1875 and 1876, showed 23,856 tons more coal to have been sold during the last-named period, and costs had been reduced, so that the profits realised per ton had been increased. No change had taken place in the published price of coal—4*l.* for large screened coal, 13*s.* for unscreened, and 7*s.* for small, less customary discounts. There was some talk about a reduction in price, but it was difficult to hazard an opinion one way or the other. Should trade improve, and coal rise in England, probably no reduction would take place, and even without that the international trade might be strong enough to support present prices. At the same time it was a fact coal was being offered at somewhat lower prices by young collieries that wish to make a market for their coal. With the view of extending the basis of the company's operations, and having more one string to its bow, the company's properties at Cadia and in Queensland had some work done upon them. As regards Cadia, matters seemed to be proceeding in a regular and satisfactory way, and it was expected that in the course of a few months the result of the crushing of a quantity of stone from the quartz reef which Capt. J. Holman was about to test for gold would be known. That this reef contained gold had been thoroughly proved, the question now to be solved was whether it could be made to pay. Economical water-power had been provided, and there seemed a reasonable chance that on a large scale with this cheap motive power a comparatively low average yield would give a profit. A good deal of work was being done, too, in the copper department of this property, as to which there had not yet been sufficient time to enable Capt. Holman to report a definite result, but the old workings had all been cleared out and repaired, and men were working on to the new and raising ore. Labour was at present plentiful there. As regards the Queensland copper property, all the information which the directors had received before drawing up the report was contained in what was there stated. Another mail, however, had since arrived, and the intelligence which it conveyed was not of so satisfactory a character as the directors had been looking for, to this extent that some samples of ore which had been sent from the mine to Sydney to be assayed had proved less rich for copper than previous samples. He did not attach too much importance to this fact, while at the same time it came as a relief to the shareholders to know as much about the company's prospects as they (the directors) felt, he liked to tell them a fact even though it should not be quite so palatable as others of a more agreeable character. In the best copper mines the lodes worked at only a shallow depth this was particularly likely to be the case. The assay of the samples in question, but at the same time it would not be prudent for the directors to base the results to be obtained from the working of this property. The directors, however, would take care that competent skill and knowledge shall be brought to bear upon these properties, and that no very large expenditure shall be made unless it shall have been pretty certainly ascertained that they are likely to produce satisfactory returns. It was, of course, a matter that caused the board some anxiety that so large a sum as nearly 15,000*l.* should already have been advanced to the Rockhampton property. There was, however, a return of some amount to be realised by the smelting of the ore already at grass and in sight, and in respect of what the mine may turn out to be in the future, and the board and manager were fully alive to the duty of spending no more than was absolutely necessary or seemed desirable. He then moved—"That the report of the directors be received and adopted, and that a dividend at the rate of 17½ per cent. per annum on the paid-up capital of the company (140,000*l.*) be declared, the same to be pay-

able, free of income tax, on and after Saturday, Nov. 11."—The resolution was seconded by Alderman Sir CHARLES WHEATHAM.

Mr. HILL wished to know whether the directors saw their way to utilising profitably further funds, and whether they proposed to call up a further amount upon the new shares? Mr. BOLTON thought it would be good policy not to open the Stockton coal-field until there should be a demand greater than could be met by the Lambton Colliery.

Mr. FRETWER approved of the moderation displayed by the board in carrying over a good sum of profit to next account, and in bringing the reserve fund up to 10,000*l.* He had had a good deal of experience in the matter of copper smelting, and he recommended the board to consider very carefully whether it would be more profitable to make regulus or fine copper at the two copper establishments. The CHAIRMAN, in reply, said that the board would not call up money unless it was really wanted, nor would they shrink from calling it up if it should really be wanted, as it would be if they should see their way to opening the Stockton coal property. As regards smelting, the remarks of Mr. Fretwer would have full consideration on the part of the board. The question of making fine copper or regulus was already being dealt with by the manager, who would act in whatever way would seem to be most likely to be profitable to the company.

The resolution was then carried unanimously. The remuneration of the auditors was voted, and a vote of thanks to the Chairman and directors, moved by Mr. HILL, seconded and carried unanimously, brought the proceedings to a close.

(For remainder of Meetings see to-day's Supplement.)

## THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

During the past week, the settlement intervening, as also two holidays—Thursday last and yesterday—have all tended to restrict business. In shares of iron and coal concerns Ebbw Vale have been reduced 10*s.*, also Omoo and Cleland 6*d.* Glasgow Port Washington have declined about 15*s.* each on both classes, the report being considered unfavourable. Shotts Iron show a reduction of 30*s.* on the stock, but the new shares are raised 5*s.*, and more business has been done in both than for a long time past. Boleckow, Vaughan, A, have improved 10*s.*; Scottish Australian, 7*s.* 6*d.*; ditto (new), 2*s.* 6*d.* (at 10*s.* to 17*s.* 6*d.*), the advance on the latter, no doubt, being on account of the favourable report. Denton and Woodmoor Collieries shares have been on offer. Andrew Knowles and Sons are at 7*s.* 6*d.*; ditto (2*s.* 6*d.*), 20*s.* to 40*s.* prem. Boleckow, Vaughan, B, 30 to 40. Bilson and Gramp, 7 to 8. Cardiff and Swansea, 32*s.* 6*d.*, sellers. Chapel House, 50*s.* to 70*s.* Consett Iron, 10*s.* 6*d.* prem., buyers. New Sharncliffe (pref.), 82*s.* 6*d.*, sellers. Sheepbridge, 50*s.* to 70*s.* prem. Skerrie Iron, 6*s.* to 7*s.* South Wales Smelting, 6*s.* 6*d.*, 15*s.* to 16*s.* West Cumberland, 10*s.* 6*d.*, buyers. In shares of foreign copper concerns Canadian Pyrites (new) have fallen 4*s.* 6*d.*, and Huntington 1*s.* Tharsis descriptions are now quoted ex div., allowing for which the old shares are 5*s.* and the new 9*s.* both better on the week. Cape and York Peninsula unaltered. In shares of home mines the tendency is pretty good. Aberdunians are at 12*s.* to 14*s.*, Ashton, 10*s.* to 20*s.* Bamfylde, 11*s.* 3*d.* Bedford United, 10*s.*, sellers. Carrigill, 5*s.* 6*d.*, sellers. Carn Brea, 3*s.* 6*d.*, buyers. Cashwell Lead, 40*s.*, sellers. Cathedral, 15*s.* 6*d.*. Clementina Lead, 37*s.* to 42*s.*. Cook's Kitchen, 60*s.* to 80*s.* Derwent Lead, 6*s.* 6*d.*. Dolcoath, 37*s.* Glasgow Caradon, 27*s.*; ditto (new), 19*s.* Great Laxey, 20 to 20*s.*. Great Wheal Vor, 10*s.* to 12*s.* 6*d.*. Gunnislake (Cliff), 45*s.*. Killbreth, 12*s.* 6*d.* to 15*s.* Lead Hills, 7 to 7*s.*. Marke Valley, 28*s.* 9*d.*. Minera, 20 to 22. North Laxey, 13*s.* to 15*s.*. Pateley Bridge, 60*s.* to 65*s.*. Pennerley, 22*s.* 6*d.* to 27*s.* 6*d.*. Penrith, 11*s.*. Pateley of Wales, 4*s.* to 5*s.*. Roman Gravel, 14 to 14*s.*. Bonhope, 16*s.*. South Condurow, 5 to 5*s.*. T. and S. 10 to 10*s.*. Van Consoils, 40*s.* to 42*s.* 6*d.*. West Maria, 2*s.* 6*d.*. West Tankerville, 30*s.* to 32*s.* 6*d.*; ditto (pref.), 45*s.*, buyers. Wheel Bassett, 21, buyers. Wheel Kitty, 50*s.* to 60*s.*. Wheal Yun, 30*s.* to 35*s.*.

In shares of gold and silver mines the only movement is an improvement of 5*s.* on Richmond, on the announcement of a 7*s.* 6*d.* per share dividend and the week's run being 340,000; two furnaces re-started. Chicago has been granted a quotation on the London Stock Exchange, and is firm at 7*s.* 6*d.*. A petition for winding-up the New Rosario Company is to be heard on the 10th inst. Almada and Tinto offer at 5*s.* 3*d.*. Chontales, 6*s.* 6*d.*. Don Pedro, 5*s.*, Emma, 7*s.* 6*d.* to 12*s.* 6*d.*. Exchequer, 42*s.* 6*d.*. Flagstaff, 17*s.* 6*d.* to 22*s.* 6*d.*. Frontino and Bolivia, 30*s.* to 35*s.*. Gold Run, 8*s.* 9*d.*. I. X. L., 22*s.* 6*d.*. Malabar, 8*s.* 9*d.* to 11*s.* 3*d.*. Malpas, 13*s.* 9*d.* to 16*s.* 3*d.*. New Zealand Kapanga, 5*s.*. Pestarena United, 4*s.* 9*d.*. St. John del Rey, 340 to 350. Teocoma, 7*s.* 6*d.* to 10*s.*. South Aurora, 5*s.* to 7*s.* 6*d.*. In shares of oil concerns, Uphall and Young's Paraffin are each raised 2*s.* 6*d.*; but Oakbank (new) is reduced 6*d.*. The shares of the last-named company have now obtained a quotation on the Edinburgh Stock Exchange. In shares of miscellaneous companies prices are firm, and unaltered. The British Agricultural Association (Limited) has attracted some attention during the week, not to its credit. Binn's Endless Band (6*d.* paid) shares are offering at 50*s.*; also Spence Brothers (Limited) Chemicals. London Gunpowder are 38*s.*; Lawes Chemical, 7*s.* 6*d.*; Langdale's Chemical, 87*s.* 6*d.* to 92*s.* 6*d.*; Milner's Safe, 10*s.* 6*d.* to 10*s.*; Newcastle Chemical, 60*s.*, buyers; and Palmer's, B, 17*s.* 6*d.*. Details of the several days' business follow:—

On THURSDAY last (being cantango-day) market quiet. Almada and Tinto done at 5*s.* 3*d.*, sellers over. Bamfylde, 11*s.* 3*d.*, sellers. Boleckow, Vaughan, A, done at 54. Canadian Copper Pyrites done at 10*s.*. Cathedral, 10*s.* to 20*s.*. Cashwell Lead, 40*s.*, sellers. Chontales, 5*s.* to 6*s.* 3*d.*. Consett Iron, 10*s.* 6*d.* prem., buyers. Cook's Kitchen, 60*s.*, 55*s.*. Dolcoath, 37*s.* to 35*s.*. Don Pedro, 5*s.* 9*d.*, buyers. Ebbw Vale, 11*s.* 3*d.* to 12*s.*. Frontino and Bolivia done at 35*s.*. Glasgow Port Washington, 45*s.* to 5*s.*; prepaid, also 45*s.* to 50*s.*. Glynn, 47*s.* 6*d.* to 52*s.* 6*d.*. Langdale's Chemical, 87*s.* 6*d.* to 92*s.* 6*d.*. Lawes Chemical, 7*s.* 6*d.*, sellers. Leadhills, 7*s.* 6*d.*. London Gunpowder, 38*s.*, sellers. Marke Valley, 28*s.* 9*d.*, sellers. North Laxey, 13*s.* to 15*s.*. Newcastle Chemical, 50*s.*, buyers. Oakbank Oil, 50*s.* to 55*s.*. Omoo and Cleland done at 29*s.*. Pateley Bridge, 60*s.* to 65*s.*. Pennerley, 22*s.* 6*d.* to 23*s.* 6*d.*. Pestarena United, 5*s.*, sellers. Richmond done at 9*s.*, closing 9*s.* to 9*s.*. Roman Gravel, 13*s.* 9*d.* to 13*s.*. Rookhope, 15*s.* to 17*s.*. Scottish Australian, 7*s.* 6*d.* to 42*s.* 6*d.*. Shotts Iron done at 50. Skerrie Iron, 6*s.* to 7*s.*. Tharsis done at 20*s.* and 20*s.* 6*d.* (ex div.), closing at these prices. Van Consoils, 40*s.* to 45*s.*. West Tankerville, 30*s.* to 32*s.* 6*d.*. Young's Paraffin done at 13*s.*, closing 13 to 13*s.*.

The following were the rates of continuation current to-day:—Contangos: 1*d.* on Canadian Copper Pyrites; 1*d.* on Emma; 1*d.* on Glasgow Caradon; 1*d.* on Glasgow Port Washington; 1*d.* on Huntington; 2*s.* 6*d.* on Marbella; 1*s.* 6*d.* on Oakbank Oil (new); and 7*s.* 6*d.* on Young's Paraffin. Backwardations: 6*d.*, 3*d.*, 6*d.* on Tharsis. Even: On Monkland; ditto (preference); Omoo and Cleland; and Richmond. The usual comparison of the making-up prices for this settlement, with those of the previous occasion, shows an unfavourable result on balance on the undermentioned:—Tharsis have advanced 2*s.*, and ditto (7*s.* paid) 1*s.*; Canadian Copper Pyrites (new), Emma, Glasgow Caradon, Marbella, Monkland, ditto (preference), and Richmond, are all unaltered, but Huntington have fallen 7*s.*; Canadian Copper Pyrites, 4*s.* 6*d.*; Benhar and Young's Paraffin each 2*s.* 6*d.*; also Glasgow Port Washington and Omoo and Cleland each 6*d.*.

On SATURDAY the new account opened for settlement Nov. 15; Saturday, Nov. 11, will be cantango day. Very little business done. Aberdunians about 13*s.* 6*d.*. Bamfylde done at 11*s.* 3*d.*, sellers over. Bedford United, 10*s.*, sellers. Carrigill, 5*s.* 6*d.*, sellers. Cathedral, 15*s.* to 20*s.*. Cashwell Lead, 40*s.*, sellers. Chontales, 5*s.* to 6*s.* 3*d.*. Consett Iron, 10*s.* 6*d.* prem., buyers. Cook's Kitchen, 60*s.*, 55*s.*. Dolcoath, 37*s.* to 35*s.*. Don Pedro, 5*s.* 9*d.*, buyers. Ebbw Vale, 11*s.* 3*d.* to 12*s.*. Frontino and Bolivia done at 35*s.*. Glasgow Caradon done at 27*s.*, closing 26*s.* 6*d.* to 27*s.*. Glynn, 47*s.* 6*d.* to 52*s.* 6*d.*. Killbreth, 12*s.* 6*d.* to 15*s.*. Llanrwst, 40*s.*, buyers. Lochore and Caplethrae done at 6. Pennerley, 22*s.* 6*d.* to 27*s.* 6*d.*. Pestarena United, 5*s.*, sellers. Shotts Iron, 50*s.* to 53*s.*. Skerrie Iron, 6*s.* to 7*s.*. South Aurora, 5*s.*, buyers. Tharsis done at 20*s.*, closing 20*s.* to 20*s.*. Van Consoils done at 42*s.* 6*d.*. West Tankerville, 30*s.* to 32*s.* 6*d.*. Wheal Bassett, 21, buyers. Young's Paraffin shares done from 13*s.* to 13*s.*, closing 13 to 13*s.*.

On TUESDAY little doing. Aberdunians, 12*s.* 6*d.* to 15*s.*; Bamfylde, about 11*s.* 3*d.*; Canadian Copper Pyrites done at 10*s.*, closing 10*s.* to 12*s.*; new shares offered at 6*d.*; Carrigill, 5*s.*, sellers; Cathedral, 15*s.* to 17*s.* 6*d.*; Carn Brea, 3*s.* 6*d.*, buyers; Clementina Lead, 37*s.* to 42*s.*; Cook's Kitchen, 70*s.* to 80*s.*; Derwent Lead, 6*s.*, sellers; Frontino and Bolivia, 30*s.* to 35*s.*; Glasgow Port Washington, 40*s.* to 45*s.*; Glynn, 47*s.* 6*d.* to 52*s.* 6*d.*; Huntington done at 9*s.* 6*d.* and 9*s.*, sellers; 8*s.* 6*d.* to 9*s.* 6*d.*; Leadhills, 7 to 7*s.*; Lochore and Caplethrae, 5 to 6; Malpas, 13*s.* 9*d.* to 16*s.* 3*d.*; Marke Valley, 28*s.* 9*d.*, sellers; Oakbank Oil (new) 12*s.*, sellers; Pestarena United, 5*s.*, sellers; Scottish Australian, 40*s.* to 45*s.*; new shares, 12*s.* to 17*s.* 6*d.*; Shotts Iron (new) done at 10*s.*; Skerrie Iron, 6*s.* to 7*s.*; Tharsis done at 20*s.* and 20*s.*, closing at those prices; Van Consoils, 41*s.* to 42*s.*; Wheal Kitty, 50*s.* to 60*s.*; Wheal Yun, 30*s.* to 35*s.*; York Peninsula (ordinary), 7*s.* 6*d.* to 10*s.*; Young's Paraffin done at 13*s.* and 13*s.*, closing 13 to 13*s.*.

J. GRANT MACLEAN, Stock and Share Broker.

Post Office Buildings, Stirling, Nov. 2.

## ECHOES FROM THE MINING MARKET.

The metal markets continue to be well supported, and mining shares consequently keep firm, with in many cases rapidly hardening prices. All tin stock is looking better, copper shares are eagerly bought whenever any low-priced descriptions offer, whilst lead shares—still steadily advancing in public favour—are extensively invested in daily. The buyer of mining shares has now everything to encourage him; he has a better market, low prices, and the steadily increasing favour of mining shares amongst all classes of investors. The present, therefore, is the time to buy.

We have received some very favourable intelligence from the Belstone Mine. The lode has now been cut into about 40 ft., and within the last week there has been an excellent improvement. Good yellow ore continues to be produced, and the prospects of a rich copper mine being developed were never more encouraging than they are at this moment. The mine is now more than paying costs. We hope next year the shareholders will commence to divide profits. With a good market for copper, and with energetic management, there is no reason, we believe, why this desirable result should not soon be attained.

Grenville has increased in value within the last few days, and from 10*s.* to 15*s.*, with a very weak market, the shares have risen to 15*s.*. We hear that the loss for October will be very small, and it is argued if this is the result on a bad price for tin, what may be expected when a better price is obtained for ore? The shares should be a cheap investment just now.

West Tolgus has given a dividend of 51*l.*—20*s.* per share—and the report is good. Most Cornish shares have been engaged for since the last rise in the standard, and the market is steady. South Crofty has divided 102*l.*—2*s.* per share—on a quarterly profit of 105*l.* "The mine," says the agent, "is looking well, and there is every reason to believe it will long continue to do so." Dolcoath shares

have again risen, and shares offered at 35*l.* last week cannot be purchased under 37*l.* This mine yields on an average 100 tons of tin ore a month. Old Treburgett has sold 30 tons of silver lead at 25*l.* 9*s.* 6*d.* per ton, and 5 tons at 20*l.* 3*s.* 6*d.* per ton; produce of sale 870*l.* Wheel Kitty has made profit of 300*l.* in three months; with a rise of 10*l.* per ton in tin the old rate of dividends could be resumed. The credit balance is now about 500*l.* South Condurow shares are firm at 5*s.* to 5*s.* 6*d.*.

In lead shares a large business has been transacted. Prices generally remain little altered, but firm. Llanrwst, Rookhope, West Tankerville, Tankerville, Roman Gravel, and West Craven Moor we may notice are particularly steady. Llanrwst shares are now 2 to 2*s.* 6*d.*. As some uncertainty appears to exist about the market price of these shares lately, we may state for the benefit of our readers that this is the highest quotation reached for months, and that it has only existed for the last week, the previous quotation having been 1*s.* 1*s.* to 2*s.*, to which price the shares rose from about 1*s.* 1*s.* to 1*s.* 1*s.*. Many hundreds have been dealt in from 22*s.* 6*d.* upwards, and although we do not say that a higher price than that now quoted may not be reached, still it is our duty to assert that any such quotation as 3 to 3*s.* has been quite premature, and unwarranted by the actual state of the market.

Capt. A. Waters' report on Leadhills will, we hear, be issued on Monday. We have only time this week to notice the fact. Next week we propose to refer to it in detail.

In foreign mine shares there is no important change to notice beyond the rise in Richmond to 10*s.* 10*s.*. Javali shares have been engaged for at 11*s.* to 12*s.*, and Santa Barbara at 2 to 2*s.*. Chicago shares are 7 to 7*s.*, and are now officially quoted.

The directors of the Thorp's Gawler Hall Collieries Company have decided to issue *pro rata* 4000 10*l.* 10 per cent. preference shares in lieu of debentures, as first proposed. Shareholders are given until the 1st proximo to decide whether to take up or decline their respective proportions. JAMES H. CROFTS.

## CAPITAL, AND ITS EMPLOYMENT.

SIR,—It is gratifying to be able to look forward to a revival in business generally, now that affairs in the East have assumed a somewhat more settled aspect. In almost every market the rally has commenced, and in many cases there is a margin for a great and important rise in prices. It is more within my province to confine my remarks for this week to British mines.

A fair business has been transacted during the week, and had it not been for the settlement, and the usual holiday on Nov. 1, the market would have been very active. The advance in tin and copper, and the steadiness apparent in these markets, have given a great stimulus to Cornish mines. Low-priced copper shares should be picked up. One of the cheapest is Cathedral. On the improvements in the mine, the shares have been in demand. Anyone who has a knowledge of the marvellous Gwennap district will not hesitate to recommend this mine as a most promising enterprise. I must, however, leave Cornish mines to refer to the property in Scotland, on which I have before commented in these columns, and to which I claim to be one of the first to have directed the attention of investors. These extensive and wonderful mines—the Leadhills, in Lanarkshire—I have visited during the week; and although a thorough inspection would occupy many days, I have seen quite sufficient to confirm the opinion I have hitherto expressed, gathered from the accounts of all who have known the property, and many reliable and eminent mining authorities who have already reported on it. No doubt most of the readers of the Journal have read what has appeared respecting Leadhills, but I am sure that there are many investors who at the present moment have capital awaiting employment, and hesitate about placing it in Leadhills shares. My advice is to delay no longer, while the shares may be had at anything like present prices. Such a property does not frequently pass into the hands of a limited company, thus affording a safe and permanent investment, with a fair return of interest.

Through the development of these mines during the past three or four hundred years a village bearing the name of Leadhills, having over 1200 inhabitants, is entirely supported, and it may even now be said that Leadhills Mines are merely in their infancy. They extend over 12 square miles, and there is ample scope for half-a-dozen companies instead of one. If I am rightly informed a report will shortly appear entering into every detail of the workings of the mines. This will so thoroughly enlighten and convince the most cautious investor that I anticipate a great demand for shares, and a consequent immediate advance in price, as the supply is very limited. I would refer to the capital (120,000*l.*) objected to by some as being large, by assuring them that if they had any idea of the value and capabilities of Leadhills Mines their fears would be dispelled. These mines, having returned enormous quantities of lead, now returning upwards of 200 tons per month, and with the certainty of this being increased and regular dividends being paid, are now selling at less than some properties which have never sold an ounce of ore, and it is problematical if they ever will. It is expected that Mr. Arthur Waters (of Roman Gravel and Tankerville), than whom a more competent and able man could not be found, will be appointed manager, while the post of resident agent will be continued by Mr. Nevill, who has been in charge for about 15 years. I must not occupy more valuable space this week, but shall be pleased to answer any queries addressed to me.

ALFRED E. COOKE.

76, Old Broad-street, London, Nov. 3.

The following report was received too late for insertion in its proper place:—

MEDLYN MOOR.—J. Prisk, C. Rowe, Nov. 2: Fair progress is being made in driving the 27 cross-cut north towards No. 2 north lode, and by our next sitting-day we hope to intersect it. This is a point of special interest, as in the level above the old men had a rich lode, which they worked as deep as they could for the water. Six men are working here at 8*l.* 10*s.* per fathom. The 27 west, on No. 1 south lode, is entering good tin ground, being driven by six men, at 4*l.* 10*s.* per fathom. The 17 west, on No. 1 south lode, is communicated with the flat-road shaft, which has given us good ventilation, and will enable us to break a large quantity of tinstone from this part of the mine. The lode here is 3 ft. wide, worth 8*l.* per fathom; working at 2*l.* 10*s.* per fathom. The lode in the rise in the back of the 17, on No. 1 south lode, is 3 ft. wide, worth 8*l.* per fathom; working by six men, at 3*l.* per fathom. The lode in the winze and slope in the bottom of the 8 is 3 ft. wide, worth 7*l.* per fathom; working by four men, at 2*l.* per fathom. The lode in the slope in the back of the 17 is 1 ft. wide, worth 9*l.* per fathom; working by four men, at 1*l.* 10*s.* per fathom. The lode in the rise in the back of the 17, east on No. 2 north lode, is 18 in. wide, worth 7*l.* per fathom; working by four men, at 2*l.* per fathom. We have completed the roof to the large dressing houses, and the dressing is going on quite satisfactorily. The mine, on the whole, never looked so well.

LEAD ORES.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
Oct. 21—	Kingston Consols.....	9½	£17 9 6	Nevill, Druce, and Co.
—	ditto .....	4½	9 8 6	ditto
23—	De Broke .....	10	14 6 6	Sheldon, Bush, and Co.
—	ditto .....	10	14 6 6	Walker, Parker, and Co.
26—	Old Treburgett.....	30	25 9 6	Nevill, Druce, and Co.
—	ditto .....	5	20 3 6	ditto
—	Roman Gravel .....	15	15 6 6	Walker, Parker, and Co.
—	ditto .....	55	15 6 6	Sheldon, Bush, and Co.
—	ditto .....	55	15 6 6	ditto
27—	North Laxey.....	30	16 1 6	ditto
30—	Grogwinion.....	10	15 7 0	George Burr.
—	Great Laxey.....	100	23 2 6	Sheldon, Bush, and Co.
31—	Teesdale .....	20	13 2 6	Joseph Dinning.
Nov. 2—	Foxdale .....	110	21 1 6	Sheldon, Bush, and Co.
—	Green Hurth Mine, sold, from May to October, 90 tons lead ore, at 13 <i>s.</i> 9 <i>d.</i> 2 <i>d.</i> per ton, to Mr. Joseph Dinning.			



## Registration of New Companies.

The following joint-stock companies have been duly registered:—

**SANITARY DWELLINGS COMPANY (Limited).**—Capital 40,000*l.*, in 20*l.* shares. To construct improved dwellings, &c. The subscribers (who take 15 shares each) are—Banister Fletcher, 29, New Bridge-street, W.; W. F. Girvan, Queen's-road, Clapham Park; Thomas Yeo, 41, Boundary-road, St. John's Wood; J. R. Tramborow, 46, Finchley-road, St. John's Wood, N.; W. J. F. H. H. Wilton Cottage, Twickenham; V. E. Etienne, 15, Oxford-road, Ealing; Alfred Hays, 13, Cavendish-road, St. John's Wood; A. F. Godson, Pump-court, Temple.

**LAS CABENZA ESTANCIA COMPANY (Limited).**—Capital 80,000*l.*, in 20*l.* shares. To acquire and work the establishment belonging to Mr. James Black, called Las Cabeza Estancia, situated in the Department of Gualequay, Entre Rios, in the Argentine Republic. The subscribers (who take one share each) are—James Black, Randolph Crescent, Malda Vale; G. C. Black, Randolph Crescent, spinsters; Frederick H. Moore, 27, Ladbroke-street, F. Neddi, Holly Grange, Borden; J. Pringle Boyde, 314, Upper Parliament-street, Liverpool; Isabel Crane, 2, Haut Bois Terrace, Jersey; Charles Darbyshire, The Hollies, Beaumont, Jersey.

**JOB SMITH AND COMPANY (Limited).**—Capital 20,000*l.*, in 100*l.* shares. To carry on business as corn merchants, millers, and forage contractors at Salford. The subscribers are—J. Palm, 38, Hanging Ditch, Manchester; Peter Foster, Bolton, 10; William Williamson, 139, Chester-road, Hulme, 5; G. Guthrie, Munden-street, Manchester, 1; J. Brun-Crett, 38, Cross-street, Manchester; A. McNay, Waste, Salford; G. Irlan, Chapel-street, Salford.

**CHLORALUM COMPANY (Limited).**—Capital 50,000*l.*, in 50*l.* shares. To carry on business as manufacturers of chloralium, chloride of aluminum, and other chemicals. The subscribers (who take one share each) are—Thomas Boyd, 50, Parliament-street; George Brocklebank, 33, Bedford-square; J. H. Tolme, 1, Victoria-street; F. B. Deolung, 5, Victoria Chambers, S.W.; John Scroton, 11, Ashley Villas, Twickenham; W. M. Hume, Linsey-road, Bermondsey; G. E. Parkinson, 49, Portington-road, Regent's Park.

**CHRISTCHURCH GASWORKS (Limited).**—Capital 50,000*l.*, in 100*l.* shares. To take over the existing gasworks, and to supply Christchurch and neighbourhood with gas, &c. The subscribers (who take one share each) are—J. J. Stevens, Stockwell; James Bridger, Manor House, Mitcham; J. J. F. Stevens, Darlington Works, Southwark; J. Biller, 14, Fenchurch-street; G. H. E. Brown, Harlesden; W. H. Williams, 20, Addington-square, W.; C. S. May, Hibernia-road, Hounslow.

**BRIGHAM MUTUAL MARINE INSURANCE ASSOCIATION (Limited).**—This company is limited by guarantee, and is formed for the insurance of ships upon the mutual principle.

**CLARKES CRANK COMPANY (Limited).**—Capital 50,000*l.*, in 200*l.* shares. To acquire Crank Works in the City of Lincoln, and to take over the business of Mr. Edward Clarke, millwright, &c. The subscribers are—G. H. Wright, Burton House, The Park, Nottingham, 75; E. S. Mason, White Hart Hotel, Lincoln, 50; M. R. W. Sibthorp, The Dover House, Canwick, 75; Edward Clarke, Tentercroft-street, Lincoln, 50; C. Cousin, Lincoln, 50; A. H. L. Melville, Branton Hall, Lincoln, 50; F. R. Larken, Minister-yard, Lincoln, 100.

**AUTOMATIC MACHINERY COMPANY (Limited).**—Capital 25,000*l.*, in 50*l.* shares. To carry on business as dealers in machinery, &c. The subscribers are—John Colbourne, 3, Bell-terrace, Churchfield-road, Acton, 5; George Watson Lamb, 61, Princes of Wales-road, N.W., 200; W. Thomson, 3, Ferdinand-place, Chalk Farm, 1; James Miller, 3, Ferdinand-place; D. McLaren, Elphinstone-road, Hastings, 1; Alexander Miller, 2, Ferdinand-place, Chalk Farm, 1; J. G. Weir, Upper Trognal Lodge, Hampstead.

**HUNSBURY HILL COAL AND IRON COMPANY (Limited).**—Capital 100,000*l.*, in 100*l.* shares. To acquire the property and effects of the Northampton Coal, Iron, and Waggon Company (Limited). The subscribers (who take one share each) are—Thomas Pressland, jun., Northampton, broker; F. E. Lewis, The Oaks, Wolverhampton, iron and mineral broker; James Barry, Northampton, ironfounder; John Blackman, The Drapery, Northampton, hosier; John Lepper, Northampton, merchant; J. B. Norman, Northampton, silk mercer; Thomas Green, Northampton, solicitor. The directors are—Messrs. Pickering, Phipps, M.P.; James Barry, F. E. Lewis, J. B. Norman, and Thomas Pressland, jun. The qualification is the holding of 50 shares, and the remuneration 200*l.* per annum and 5 per cent. on the net profits after deducting all expenses and the sums set apart to meet depreciation.

**LIVINGSTONE HALL COMPANY (Limited).**—Capital 12,000*l.*, in 100*l.* shares. To erect a concert-hall at Darlington.

## THE WEEK.

**SATURDAY, Oct. 28.**—The advance yesterday of 3*l.* per ton for Cornish tin, and the fact of Dolcoath being able, notwithstanding the badness of the times, to deliver a 7*l.* 6*d.* dividend, has given rather a fillip to mining. Dolcoath advanced 2*l.* to 3*l.*, while Wheal Grenville improved to 3*l.* 5*s.*, buyers. Some enquiry prevailed for East Caradon, South Condurrow, and Wheal Creher. It appears that a good many lead mining shares will be taken off the market this account, which will make prices firmer. Llanrwst shares continue very firm, and were quoted to-day 13*l.* to 14*l.*; Aberdunant, 5*l.* to 7*l.*; Bampfyde, 10*l.* to 15*l.*; Malabar, 8*l.* to 10*l.*; Rica, 4*l.* to 5*l.*; Malpas, 5*l.* to 7*l.*; Sweetland Creek, 5*l.* to 7*l.*; Fron-tino, 15*l.* to 17*l.*; Sierra Buttes, 15*l.* to 17*l.*; Exchequer and I.L.L. remain dull; the former can be had at 35*l.*, and the latter at 19*l.*. Port Phillip were offered at 7*l.* 6*d.*, and Eberhart at 35*l.*. Glyn shares were quoted 2*l.* to 2*l.* 2*d.*; Great Laxey remain steady at 20*l.*

**MONDAY.**—The settlement was concluded to-day, and with but three failures—four persons in all—a firm of brokers and a couple of jobbers in the foreign market, who were caught in the rise on the fall; none seemed to be for large amounts. But little fresh business was done to-day, and the tone remained good for railways. British reached par, and Caledonian were dealt in at over 120*l.* Foreign stocks were inclined to dullness, except Argentine, the 1878 Loan was quoted as high as 87*l.*. Egyptian of 1873 dropped 15*l.* per cent. to 40*l.*. Foreign and Colonial Trust First Issue, 75 to 80. Fifth ditto, 44 to 50. These are daily becoming more and more unmarketable. United States Mortgage, 97 to 98. Nebraska Coal, 3*l.* to 5*l.*. Credit Foncier, 11*l.* to 12*l.*. Eley Brothers, 23 to 24. English Credit, 31*l.* to 41*l.*. General Credit, 8 to 6*l.*. National Discount, 8 to 8*l.*. Australian Agricultural, 100 to 102. Canada Company, 91 to 93. Hudson Bay, 17 to 17*l.*. Brighton Aquarium, 14*l.* to 15*l.*. Native Guano, 2*l.* to 3*l.*

**TUESDAY.**—About noon the foreign market was thrown into disorder by official intelligence of "an ultimatum" having been handed to the Porte by the Russian ambassador. The upward tendency of all the Russian issues was at once checked; for the last ten days they have been gradually ascending in value, to the surprise of those best informed as to that country's embarrassment. Thus, the 1873 reached again the price it stood at previous to Wednesday's collapse. There was a fall to-day of over 2*l.* to 8*l.*, and a similar decline in nearly all the other issues. Hungarian were just as much distressed; indeed the 1873 and 1874 Loans fell as much as 3*l.*, closing at 7*l.* and 7*l.* 5*s.* respectively. Home railways, of course, fell in sympathy, but closed above the worst; the weakest were Caledonian, Great Eastern, and North British. Mining shares had a steady market. Cathedral, 7*l.* to 15*l.*. Glyn, 23*l.* to 25*l.*. Belstone Copper, 10*l.* to 15*l.*. Marke Valley, 15*l.* to 17*l.*. It was mentioned that Richmond will shortly declare a dividend. Shares firm at 10. Run, 340,000.

**WEDNESDAY.**—Holiday on Stock Exchange.

**THURSDAY.**—A very dull tone was evident at opening; Russians went down to 80*l.*, and Balch were offered at 90. Shortly after 10 o'clock, when it was stated that the armistices had been satisfactorily arranged, great excitement prevailed, and so eager were the "bears" to get stock so as to close that very unreasonable prices were made in a very few minutes. British bounded up to 102, while Russians flew up to 84, although the buying was by no means large, but sellers were very shy. Tonsols touched 94, and this encouraged railway buying. The traffics were also considered good. Midland had an increase of 6090*l.*; Great Western one of 4270*l.*; and Great Eastern one of 2593*l.*. Bilson and Crump were dealt in at 8 to day, and Chapel House at 34. Newport Abernethy, 5 to 5*l.*; the directors seek power to borrow 40,000*l.* on debentures, although they do not count upon requiring more than half that amount. The meeting will be held on the 14th inst., and the directors hope the shareholders will make an effort to attend, as the underground manager and engineer will be present to give every information about the colliery.

**FRIDAY (opening).**—Prices are again strong, and mostly show an advance on last night. Caledonian, 122 to 123*l.*; British, 103 to 103*l.*; Great Eastern, 40 to 42*l.*; Sheffield, 74*l.* to 75*l.*; Dover, A, 113 to 113*l.*; Berwick, 157 to 157*l.*; Birmingham, 145 to 145*l.*; Metropolitan, 105 to 105*l.*. Egyptian advanced to 41*l.* on some special buying by those likely to know something of Mr. Goschen's report which was handed yesterday to the Khedive. I. X. L., 7*l.* to 14*l.*; Bampfyde, 5*l.* to 7*l.*; Newport Abernethy, 4*l.* to 5*l.*; Bilson and Crump, 7*l.* to 8*l.*.—*Two o'clock.*—The temporary relief at noon caused by the continental bourses being behind us in the race has been got over, and "buy, buy" is still the order of the day. British are up to 104*l.*, 104*l.*, while Egyptians are as high as 45*l.* to 45*l.*. Argentine of 1873 have been done at 71, but have eased down to 69. Russian, 153, 85*l.* to 85*l.*; ditto of 1862, 83 to 84; Caledonian, 122*l.* to 122*l.*. Paris prices only make Egyptians 42*l.*.—*Four o'clock.*—Consols from 91*l.* are 4*l.* easier, and prices generally are not so good. Egyptians are 44*l.* to 44*l.*, but British remain very firm at 104*l.* to 104*l.*. Chapel House, 34 to 34*l.*; Belstone Copper, 10 to 11*l.*. The Bilson and Crump Colliery meeting, called for three o'clock, is still sitting, and there is a good attendance.—*Birmingham, Nov. 3.* FREDERICK R. KIRK.

**FLAGSTAFF SILVER MINING COMPANY OF UTAH.**—A petition for winding-up the above company has been presented to the Court of Chancery by Mr. F. W. Snell, solicitor, a creditor of the company, and the petition will be heard before the Master of the Rolls on the 11th inst. This unfortunate property was introduced to the British public in November, 1871—about a month after the launching of the notorious Emma Silver Mine—the object being to purchase and work the Flagstaff Silver Mine, situate in Little Cottonwood Canyon, Utah. The consideration paid was 300,000*l.*, of which 100,000*l.* was paid in cash and the remainder in fully-paid shares. Like most of the other American Mines introduced at the same time to the English investor (many of which have turned out such miserable failures), the excellencies of the Flagstaff were vaunted in extravagant terms, and the yield of the mine represented to be equal to a dividend of 33 per cent. As a matter of fact dividends were actually paid for a short time at the rate of 24 per cent. per annum; but this flourishing state of affairs was but of short duration, and no dividend has been paid since August, 1873. A committee of investigation which was subsequently appointed, ascertained that although 123,000*l.* had been distributed in dividends, only 50,000*l.* had been earned, the balance having been borrowed. The subsequent appeals to, and negotiations with the vendor, with the view of inducing him to return a portion of the purchase money, are familiar to all readers of the *Mining Journal*; and for some time past it must have been evident to the most sanguine shareholder that the days of the Flagstaff were numbered.

## Mining Correspondence.

## BRITISH MINES.

**ABERDUNANT.**—S. Toy, Nov. 1: Setting Report: The deep adit level, to drive a cross-cut south, towards the new shaft, by six men, at 8*l.* per fathom, for 2 fms. 3 ft., which will bring us under the new shaft. In the east part of the sett (Crown) the cross-cut to drive towards the south lode, by six men and one boy, at 8*l.* 10*s.* per fathom, for the month; the ground is still very hard for driving.—Surface: We shall finish putting the roof on the engine-house this week.

**ASHETON AND WEST ASHETON.**—John Craze, J. Manley, Nov. 2: West Ashteton: We have commenced driving the 40 west of boundary shaft; the lode here is yielding 1½ ton of lead per fathom. No change of importance in the 80 and 90 west.—Ashteton Proper: No change in any part of the mine since last report.

**BEDFORD UNITED.**—R. Goldworthy, W. Phillips, Nov. 2: The lode will be taken down in the different levels, so as to give a full report for the meeting on the 8th inst.

**BELSTONE.**—J. Neill, Oct. 28: A Shaft—Main Lode: The 80 cross-cut south has been driven this week 1 fm. 3 ft.; total distance from shaft, 27 fms. 4 ft. 3 in. Driven on the lode about 33 ft. Good progress has been made in driving this week, the strata being favourable for driving, and still highly mineralised; the drive continues to yield good yellow ore. The level east from the 80 cross-cut was commenced in the early part of the week, and is being worked by four men; distance driven, 5 ft. 6 in.; the stratum is equally favourable as that passed through in the cross-cut, being composed of all the favourable properties essential for the production of yellow ore, and which is being met with as the drive proceeds, and from all indications we may expect an early improvement as we get away from the cross on a 2.—C Shaft: The 40 stopes are much more productive than they were last week, a great improvement having taken place both in the character of the strata and in the yield of ore, there is every appearance of its further improving and lasting for some time, the indications being peculiar and analogous to those we have before met with around the ore in this mine.

Nov. 1: I am pleased to inform you the 40 stopes, C shaft, have again further improved in the yield of ore this month, and are now looking very well indeed, the strata around the ore being of the most promising character, and easy for working. This improvement is in ground quite unexplored, and from the favourable indications showing there is every probability of its continuing productive for some distance. The strata at the 80 cross-cut, A shaft, continue highly mineralised and favourable for progress. The drive east still yields good yellow ore, the strata being composed of garnet, hornblende, hornstone, chlorite and quartz, all of which are favourable to the production of ore, and good progress is being made in this drive.

**BODIDRIS.**—H. Hotchkiss, Nov. 1: The 45 yard level east is progressing satisfactorily, and the lode is improving for lead as we near the junction of this lode with Craigioz. The 30 east is much the same as last week; here we are meeting with oblique joints faced with lead, and which I think are connected with the Craigioz lode. The strata in the back of this level will produce about 2 tons of lead ore per fathom. The 60 cross-cut driving south, to intersect the Macay-pwl lode, is in soft ground, and the progress is most satisfactory. Dressing operations proceeding.

**BRUNFLOYD.**—Thos. Kemp, Nov. 3: Setting Report: No. 3 Shaft, North Lode: At the 110 the shaftmen have nearly completed the cutting of the pit, but before we can proceed further with this work we must draw the orestuff which has accumulated during the last nine days in stripping down the main part of the lode in this same level, or otherwise the men will be hindered; however, I hope to have the pit finished and pent-house put in; in fact, everything in order to commence sinking the shaft in a fortnight from date. Four men to drive the 110 cross-cut, at 17*l.* per fathom; the part of the lode opened on by this driving is presenting a good appearance, and worth from 15 to 20 cwt. of ore per fathom; leaving good ore standing on the north side. Twelve men to strip down the main part of the lode to the east winze at 9*l.* per cubic fathom; the ground is a little more easy for breaking, and so far as opened about the same value as last reported—25 cwt. of ore per cubic fathom. Twelve men to stop over the 94, to the east of Joshua's winze, at 6*l.* per cubic fathom; the lode here is not looking quite so well, now worth from 10 to 12 cwt. of ore per cubic fathom. A tribute pit, to two men, over the back of the 73 to the east of shaft, for one or two fms. at 10*l.* per fathom, with a tribute of 12 cwt. per fathom. Turn tribute pit to the 40, west of shaft, is worth about 12 cwt. of ore per fathom; worked by two men, at 14*l.* per fm.; this contract will not terminate before the end of the present month.—No. 2 Shaft, Middle Lode: Two men to drive the 52 end, west of Lloyd's cross-cut, at 14*l.* per fathom, which includes the removal of stuff; there is no change to report in the character of the lode here, which is much the same as for some time, being composed of killas, carbonate of lime, and spar, intermixed with a little ore, but not enough to value. The north part of the lode in the 40 level, at 17*l.* per fathom, is now being cut out, and the progress of the past month has produced low-quality stuff, but not sufficient to pay for working; I have put the men to strip down the south part of the lode to prove should there be anything better in that direction. Hauling and dressing going on with all regularity. Machinery in fair working order.

**CLEMENTINA.**—W. Bennett, Nov. 1: I have put the men who were engaged cutting pit at the 25 to drive the 15 end shaft; when they began driving on Monday the ground was very hard, and the lode small, but I am glad to say the ground has now become much easier, and the lode is opening out, and looks very promising for a good prospect. The blende lode is 4½ ft. wide, worth 35 cwt. of blende per fathom, and I am glad to inform you that there is some nice lead mixed with it. It is a fine strong looking lode as one can wish to see. I am having some timber cut to put in a shoot to bring the blende down from the side of the mountain, when we shall at once commence washing.

**CWM ELAN (NEW).**—W. Goldworthy, Oct. 28: All operations both underground and at surface are being pushed on with regularity, and there is no change to notice since last report. We are cutting down the parcel of blende ore to rail, and as far as possible, and another parcel of 150 tons is in preparation, and will be ready shortly; there are 7 tons already in the bin.

**DE BROKE.**—J. Phillips, Nov. 1: The ground at Wilson's shaft continues favourable; present depth under the 35 fm. level, 10 ft. There is nothing new to report in the 35 west, as no lode has been taken down for some days. The lode in the 35 east is more open, with fine stones of solid lead ore in crystallised quartz. The rise in back of the 35 is worth 15*l.* per fathom. The stopes are without any alteration to notice. All surface operations are going on well.

**DE WENT.**—John Morphet, Oct. 31: I beg to hand you herewith the list of bargains let here on 5th July last. The setting was very well attended.—Jeffrey's Shaft, Middle Vein: The 95 31 fm. east of sump opposite shaft, is composed of limestone, white iron, a little spar and lead ore, worth of the latter 9 cwt. per fathom—vein 3 ft. wide; over this level we have now four stopes, the first, 26 fms. east of sump, 4 ft. wide, and worth 14 cwt. of ore per fathom; the second, 17 fms. east of sump, 4 ft. wide, producing 10 cwt. of ore per fathom; the third, 13 fms. east of sump, 4 ft. wide, producing 13 cwt. of ore per fathom; and the fourth, 10 fms. east of sump, 3 ft. wide, and yielding 10 cwt. of ore per fathom. The cross-cut north at the 93, opposite the shaft, is now across 2 fms. 2 ft. 5 in., and in the end is a bed with iron ore, showing a rapid dip, indicating our near approach. I hope to the strong porous vein we discovered in the cross-cut at the 95 east. The extension of this cross-cut some 6 ft. or 8 ft. further northwards should cut the lode. The 91, 97 fms. west of sump opposite shaft, is without change; we are driving by the side of the vein, some 3 or 4 fms. back from the end two men are stripping down the vein in the level, and have not yet got the north wall; the part taken is 3 ft. wide, and worth 19 cwt. of ore per fathom. In the back of the 93 west there are three stopes, the respective width of which is 13, 19, and 16 cwt. of ore per fathom; average width of vein nearly 6 ft. As, however, they are too close upon each other for two men working, I have ordered the 93 west to be stopped the middle one. The cross-cut south at the 70, towards the Sun vein, is now driven 14 fms. 4 ft. 1 in. in shale upon the little limestone. In my report of the 12th ultimo I mentioned having cut in this cross-cut what we then supposed to be a branch of the Sun vein; this branch or vein, according to present appearances, seems to be carried away southwards on the top of little limestone for several fathoms before settling down into the sill, as near the present end of the cross-cut the ground under our feet is unsteady, showing symptoms of a vein. We purposed cutting the cross-cut another fathom, and if in that drive we do not cut any thing more, then to take upon the top of the cross-cut, and drive the 93 west to the 50, 120 fms. east of Reed's shaft, has now been driven 6 fms. 10 in.; as yet we have not made any discovery, but we are meeting with backs running at right angles with the cross-cut, out of which water is cozing.—Taylor's Shaft, Middle Vein: The cross-cut at the 40, 125 fms. east of shaft, has been extended 5 fms. 2 ft. 5 in. in a hard compact sill. Our progress here is slower than we anticipated.—Westgarth's Shaft, Middle Vein: The 74, 174 fms. west of shaft, is worth for ore 14 cwt. per fathom; vein 3 ft. wide, and promising to improve. The stopes in the back of the level, 171 fms. west of shaft, produces 13 cwt. of ore per fm.; vein 3 ft. wide.—Surface: The water race for the stone-breaker has been cut, and the part necessary to be walled and covered is completed. The walls for wheel-pit are up 4 ft., and the carpenters, when an opportunity offers, are making ready the gearing to be connected to the water-wheel. The various branches are being pushed as much as possible.

**DEVON GREAT CONSOLS.**—James Richards, Nov. 3: Wheel Anna Maria: Engine Shaft: In the 80 west, and west of Jeffrey's cross-cut, on the new south lode, the lode is 2 ft. wide, composed of capel, quartz, and mundle. The sinking drive new shaft, in the 80 west, is now 11 fms. to the west of Jeffrey's cross-cut, has been resumed, in which the lode is 3 ft. wide, composed of gossan, prin, capel, quartz, mundle, and a little black oxide of copper.—Wheal Emma: New Shaft, New South Lode: In the 175 east 2½ ft. only of the lode at present is being carried, which is composed of quartz, mundle, capel, and ore, worth 5 tons, or 20*l.* per fathom. In the 180 east the lode is 4 ft. wide, and worth 5 tons of ore, or 20*l.* per fathom. In the 145 east the lode is still 4 ft. wide, and worth 6 tons of ore, or 24*l.* per fathom. The lode in Cocking's winze, sinking below the 145 east, is still 3 ft. wide, and worth for the length of the sink (9 ft.) 9 tons of ore, or 36*l.* per fathom. In the 130 east, the lode is 4 ft. wide, and worth 6 tons of ore, or 24*l.* per fathom. In the 130 east, west of Tregay's cross-cut, the lode is still worth 4 tons of ore, or 16*l.* per fathom. The lode in the 115 east is 2½ ft. wide, and still worth 3 tons of ore, or 12*l.* per fathom. We sampled on Friday, Oct. 27, computed, 967 tons of ore, for sale on the 23rd inst., of improved quality.

**DUBBY SYKE.**—Wm. Tallantire, Oct. 27: Dubby Syke Level: We have nearly got the old rise secured; I think by another day or so we shall complete it, and get to the forehead.—Shooting Box Level: We are making good progress in driving on the vein east at this level. I do not see much alteration with the vein yet; the beds seem to go down fast. I think we might expect some ore near the close at hand.

**EAST VAN.**—W. Williams, Nov. 2: Tempest shaft is within 10 fms. of reaching the fm. level. The winze sinking below the 25 is down 2 fms. We take the advantage of a leader of soft ground on the south side of the lode, in order to sink the winze rapidly; but we take about 2 ft. of the lode down with us, which is intermixed throughout with cubes of lead ore, and looks very kindly. I hope to have this winze sunk 12 or 15 fms. by the time the shaft is through, when we shall have plenty of ventilation to cross cut north from the then bottom of the winze to prove the value of the lode.

**EAST CHIVERTON.**—R. Southey, Nov. 1: The lode in the 74 west is very much

improved for lead, and is letting out more water. A full report shall be sent next week, after I have seen further into it. The counter lode at the 64 is much the same as when last reported on.

**EAST DARREN.**—Oct. 31: In the 150, west of Skinner's shaft, the lode is 5 ft. wide, containing spots of lead ore, but not of any value. In the 130, east of Lewis's winze, the lode is large, a little improved in appearance, yielding saving work for dressing. In the winze sinking under the 116, 40 fms. east of Lewis's winze, the 92 the lode is 2 ft. wide, a little fallen off in value, now yielding 10 cwt. of lead ore per fathom. In the cross-cut south, at the 80, we have intersected small branches of lodestuff, containing small spots of lead, but hope yet to meet with a better part of the lode. The tribute pitches throughout the mine are without any improvement to report. Our machinery is in good order, and we are proceeding regularly, with a good supply of water.

**GAWTON COPIER.**—G. Rowe, G. Rowe, jun., Oct. 28: The winze sunk below the 117 is down the required depth for the 132 fm. level, where we purpose to drive east on the course of the lode beneath the run or dip of ore ground discovered in the levels above. The lode in the stopes in the back of the 117 is worth 10*l.* per fathom. The part of the lode carried in the 105 east is 4 ft. wide, principally composed of spar and mundle, intermixed with good quality yellow copper ore, worth 8*l.* per fathom. The lode in the stopes in the bottom of the 95 is worth 12*l.* per fathom. No. 2 winze, sunk in the bottom of the same level, is now down 5 fms. 3 ft., where the lode is laid on 5 ft. wide, being principally composed of capels and spar, intermixed with mundle and ore. The part of the lode carried in the 82 east is 5 ft. wide, principally composed of spar, spotted with ore, at this point we purpose to cross-cut south to intersect a part of the lode gone out change, and yielding its usual quantity of ore. Our last sampling, weighed off yesterday, amounted to 305 tons 18 cwt. 3 qrs. of copper ore.

**GLASGOW CARADON CONSOLS.**—Wm. J. Taylor, Wm. Taylor, Oct. 31: In the 78 east the lode is still split, and somewhat disordered, the part carried worth 8*l.* to 10*l.* per fathom. In sinking the new shaft below this level we have a good branch of ore in very favourable ground, but the water is retarding the progress very much.—Middle Level: No change in the rise in back of this level. The end going east the ground is easy, and the lode is worth full 15*l.* per fathom. East on north lode it is worth 8*l.* per fathom. No change in the 65 east, it is not yet forth to take the rise putting up from the midway. The stopes and pitches throughout the mine are about the same value as last reported—looking very well. The work at the new shaft is all being pushed on as fast as possible. The boiler of the winding engine has sprung a leak, which we are getting repaired. The boiler will cause 10 days or a fortnight's delay in the drawing and dressing, which will interfere with the quantity for our next sampling; however, any deficiency we hope to make up in the sampling after.

**GLENN ROY.**—R. Rowe, Nov. 2: No particular change up to last night. Signs of drawing near lode in the 60 cross-cut west, on slide. Stopes still too long west.

**GOGINAN AND LEVEL NEWYDD.**—Oct. 31: At Bryn Pica shaft we have completed the pit, fixed girders, &c., for carrying the kibble into same at the 120, and have this day commenced sinking said shaft below that level with full force. In the 120, west of Bryn Pica shaft, and west of winze below the 110, the lode is 4 ft. wide, unproductive at present, but we expect an improvement here very shortly as the level advances into the ore seen at the level above. The 120, east of 110 fm. level, has been commenced to sink, and level west of winze below the 110 fm. level, 30 fms. west of Bryn Pica shaft, which has given good evidence, and the 120 is now being driven east of the winze in a large lode, containing a good mixture of lead and blende ore, and likely to improve. I may mention that this end and the 120, west of Bryn Pica shaft, are not extended far enough yet to get into the most productive ore ground seen in the level above. In stripping down the north part of the lode at the 120, west of western shaft, we find it worth from 1½ to 1½ ton of lead ore per fathom; a strong, hard lode. Good progress is being made in sinking the western shaft below the 120, and the lode is showing signs of improvement, and good stones of ore occasionally. The tribute pitches are without any material change, producing about their usual quantity of ore. The drawing, dressing, &c., are being proceeded with regularly, and we shall get all the ore we possibly can ready for market by our next sampling day.

**GOREU (Silver-Lead).**—W. Nicholls, Nov. 1: The lode in the engine-shaft still maintains its size and character, and producing good saving work of silver-lead ore, and judging from the present appearance of the lode doubtless profitable results will be realised at a deeper point. Fair progress is being made in sinking the shaft, which is now 9 fms. 5 ft. down.

**GOISEDD AND MERLLYN.**—W. Edwards, Nov. 2: The new shaft through to the level, and I am making all the haste possible to complete the necessary work to explore the ore proved.

**GREAT DYLIFFE.**—E. Rogers, Nov. 1: Dylyffe Lode: The shaftmen are engaged dropping the lift in the underlie engine shaft below the 120; as soon as this is done and the connection made for pumping we shall commence driving east and west at the 132. In the 120 end, driving east, there is no alteration; the lode is 3 ft. wide, and unproductive. At this level we are driving by the side of the lode. At the 105 east we have just commenced to strip down the lode, its value shall be stated in next week's setting report. In the 61 cross-cut the slide cut into about 2 ft.; so far seen it is unproductive. I expect to cut the slide in this end shortly, and to find an improvement in the lode at the same time. There is no alteration in any of the other workings.

**P.S.**—Since writing the above the men working at the 105 (stripping) have brought up some splendid stones of lead ore; judging from the size and quality of them I should think there is a very rich lode there.

**GREAT HUTHILL.**—Wm. Vipond, Oct. 25: The two branches west of No. 1 cross vein are both poorer than they have been, but both yielding cruder work. We are stopping No. 1 at present, and driving No. 2. The end on our east west vein is harder this week, and the ore coming from it is more blazey; it is hardly so good as it has been. The stopes on No. 2 cross vein is a little better ore, and the stopes on the east branch has also slightly improved. We have got the new cylinder to crushing mill in its place, and the larger buckets all put on. We have sent 14 tons 8 cwt. of lead ore to Alston Station this week, and expect to increase this quantity very much weekly by means of the alteration made in the machinery.

**HALKY DEEP LEVEL.**—Oct. 31: The pitch below the 174 yard level, east of junction, on Pant-y-go vein, is set to five men, at 9*l.* per ton tribute; the lode at this point is 2 ft. wide, principally composed of spar and blende; we have not been able to get much ore from this pitch during the past month in consequence of the water being so quick. We have cut into a cross-pitch, which is letting in a great deal of water; we have put in a 4-in. hand-pump, which will keep the water at present, but should not work much more than to stop the water from the winter season, or until such time as the deep level is driven up to the level down the water. There are two men as usual keeping up the rears to the deep level and sundry other work throughout the mine. It will take us about a week to get up the tributors' work for last month, and to wash it up.

**HARWOOD.**—Wm. Tallantire, Oct. 27: Herdship: We are opening ground fast on the east and west vein. I do not see any change to call for remark. There has not been much work done in No. 2 vein this week. The men have been engaged taking rails out of Lock's level, and enclosing the new washing-shaft at Herdship.

**HINCHSTON DOWN CONSOLS.**—J. Richards, Nov. 2: Bailey's engine-shaft is in a regular course of sinking below the 160, and tolerably favourable progress is being made—Bailey's Shaft: In the 160 west the lode is still worth 2 tons of ore, or 8*l.* per fathom. The lode in the stopes below the 150 west is still worth 5 tons of ore, or 15*l.* per fathom. In the stopes in the back of the 150 west the lode continues worth 4 tons of ore, or 12*l.* per fathom. In the 140 west the lode is 4½ ft. wide, composed chiefly of capel with a little ore. This drive is now 1½ ft. down, and is being put up in the back through the 140 west



THE COPPER TRADE.									
Stocks in Europe:									
Chili ores and regulus, Liverpool & Swansea (equal to fine).....	2,611	Tons							
Chili bars in Liverpool.....	9,302								
Ditto Swansea.....	2,636								
Chili ingots in Liverpool.....	200								
Ditto Swansea.....	—								
Foreign copper (chiefly Australian) in London.....	2,693								
English copper in London.....	62								
Chili bars and Barilla in Havre.....	7,553								
Other copper in Havre.....	425 = 25,769								
Afloat and chartered from Chili to Europe (advised by mail):— Ores and regulus (equal to fine).....	3,000								
Bars and ingots.....	5,000 ± 8,000								
Afloat from Australia (advised by mail):— Fine copper.....	1,631								
Afloat and chartered from Chilito Europe(advised by cable):— Fine copper.....	3,900								
Total.....	Tons 32,300								
Price of bars, 76½ 10s.; Australian, 85½; English tough, 82½ 10s. Total shipments of Lake Superior copper (from Jan. 1 to Sept. 13, 1876) to Europe were 4668 tons—Havre, 3077 tons; Hamburg, 1200; Bremen, 77; Rotterdam, 131; Antwerp, 130; Liverpool, 253; and London, 100 tons. <i>Lendenhall street, Nov. 1.</i>									HENRY R. MERTON AND CO.
The upward tendency referred to in our last monthly circular continued to develop itself early in the month, the market became very active, and a sharp rise of ½ per ton was soon established. At this point the war rumours produced a slight scare, and there was some reaction, but buying again commenced, and the market rose to its former level. We quote Chili bars, 77½; Wallaroo, 85½; Barra, 84; tough, 81½; manufacturers' to 80½; ore and regulus, 18s. 6d. to 18s. per unit. The imports and exports for nine months, January to September, were by the returns of the Board of Trade—									
IMPORTS.									
Ore.....Tons	1876. 55,508	1875. 40,570	1874. 38,575						
Regulus.....	22,829	23,367	21,139						
Copper.....	29,330	31,420	29,730						
EXPORTS.									
Foreign raw.....	12,774	11,106	15,292						
English raw.....	8,711	8,168	5,345						
Manufactured, including yellow metal and brass.....	17,330	18,949	18,602						
<i>London, Nov. 2.</i>									FRENCH AND SMITH.
Throughout the entire month there has been an improved tone in this market, and a very considerable business has been done in all descriptions alike for home consumption and export; the result has been the establishment of an entirely different range of prices, compared to those ruling since May last, and more, perhaps, in accord with the normal value of the article. On the other hand, the demand for the very large individual Chilian holding, are now gradually increasing; and as quotations creep upwards 80c., a strong disposition will probably be shown to realise some portion of this large holding. Raw material of finer sorts is scarce, and there is great timidity shown by the English smelters in making sales, which much contracts business. India has taken fair quantities of manufactured copper, as well as yellow metal, and the prices of both have been advanced—the former to 88½, the latter to 8½d.									
The imports of copper into England for the first nine months of the following year were—1876, 62,722 tons; 1875, 50,641 tons; 1874, 55,031 tons; 1875, 61,891 tons; 1876, 59,720 tons. The exports for the same periods were—1872, 31,865 tons; 1873, 40,949 tons; 1874, 44,144 tons; 1875, 36,733 tons; 1876, 37,746 tons. The position from Nov. 1, 1875, to Nov. 1, 1876, was as follows:—									
	Price.	Stock on hand.	and chartered.						
1875—November 1.....£	82 10 0	Tons 23,549	Tons 32,335						
December 1.....	81 0 0	20,885	29,222						
1876—January 1.....	81 0 0	20,885	29,222						
February 1.....	81 0 0	20,885	29,222						
March 1.....	76 0 0	21,963	27,843						
April 1.....	77 0 0	20,734	30,982						
May 1.....	79 10 0	21,169	31,988						
June 1.....	78 0 0	22,882	30,987						
July 1.....	74 0 0	24,834	31,431						
August 1.....	72 0 0	25,598	31,803						
September 1.....	73 0 0	24,617	31,748						
October 1.....	73 0 0	24,879	31,679						
November 1.....	76 10 0	25,710	33,741						
And the comparative positions at the same date of the past four years with the present are as follow:—									
	Price.	Stock on hand.	and chartered.						
1872—November 1.....£	83 0 0	Tons 29,844	Tons 40,961						
1873—November 1.....	83 0 0	29,845	4						



warehouse and floating stocks, and the demand for consumption showing signs of increasing. We give the following figures for the month of October as compared with the two previous years:—

London statistics—	1876.	1875.	1874.
Arrivals during October .....	859	1310	1338
Delivered from stock .....	1034	1315	978
Strait shipments .....	300	880	550
Strait afloat .....	400	1300	1050
Australian shipments, about .....	500	500	600
Ditto afloat, ditto .....	1900	1000	—
Stock, November 1 .....	7745	5595	3018
Price of Straits, November 1 .....	274 10	258 10	293
Statistics in Holland—	1876.	1875.	1874.
Deliveries: Banca .....	705	340	455
Bilition .....	392	331	271
Stock: Banca .....	3046	3104	4740
Bilition .....	896	900	810
Afloat: Banca .....	140	530	400
Bilition .....	1170	1000	—

Callum-street, Nov. 1.

The demand for tin much increased during October, and the deliveries from London and Holland were large, together 2180 tons; the stocks are in consequence decreased, and will be seen by reference to the figures herewith. The large delivery from London is the more remarkable as the tin-plate continues depressed, and its consumption of tin much below the average. The price of Straits to-day is 75s.; Australian, 73s. 10s. to 74s. In Holland, Banca is quoted 45 1/2; Bilition, 44 1/2.

Foreign in London, estimated at .....	Oct. 1.	Nov. 1.	Nov. 1.	Nov. 1.
Banca in Holland, warrants .....	7,989	7,750	5,893	3,018
Bilition in Holland, ditto .....	1,299	637	634	450
Afloat for Europe, Straits, advised by mail .....	984	735	847	765
and telegram .....	600	350	1,300	1,048
Afloat, Australian ditto .....	1,680	1,900	920	1,000
Afloat, Bilition .....	750	1,120	1,000	750
Banca in trading Company's hands .....	1,208	1,390	2,275	3,990
Banca afloat, by sailing vessels .....	219	140	497	375
Total .....	14,680	14,022	13,066	11,384

Nov. 7.

FRENCH AND SMITH.

With this week's Journal a SUPPLEMENTAL SHEET is given, which contains:—Original Correspondence: Sudden Outbursts of Gas in Collieries; Emma Silver Mining Company (A. W. MacDougall); the La Manche Mining Company (M. J. Feilden); Manufacture of White Lead; Rock-Boring Machines (J. Barkell); Legitimate Mining—Welsh United (J. Watson); Pembrokehire (T. Evans); Cardiganshire Mines—Penybryn (A. Francis); Mining in Cardiganshire and Caernoyon, or North Rheidol Mine (A. Francis); Cornish Mining; Longitudinal Extent of Lodes; Valuable Discovery of Copper in Devonshire (G. Sparke); Cwm Dwyfor Mine, Carnarvonshire; St. Austell Mining District (R. Symons); Iron Ships and Guns for War Purposes—Iron Shipbuilding—Mr. John Case on £10,000 (J. Clare); Foreign Mining and Metallurgy—Mineral Wealth of New South Wales—Almaden and Trito Consolated Silver Mining Company—Foreign Mines—Esmeralda Mine—Special Report—Meetings of Exchange, I. X. L. Wheel Crebor, South Carolina; Wheat Kitty, Blue Hills, Penna., West Tolgus, Llan Gw, Great North Laxey, and Copiapo Companies.

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## The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, Nov. 3, 1876.

IRON.	£ s. d.	£ s. d.	£ s. d.
Fig. GMB, f.o.b., Clyde .....	2 17 6	—	—
" Scotch, all No. 1 .....	2 16 8	3 8 6	—
" Welsh, f.o.b., Wales .....	5 15 0	6 0 0	—
" in London, 6 10 0	6 15 0	—	—
" Stafford .....	8 0 0	10 0 0	—
" in Tyne or Tees .....	1 5 0	11 10 0	—
" Swedish, London .....	5 0 0	11 10 0	—
" Welsh, at works .....	5 2 6	5 0 0	—
Railway chairs .....	—	—	—
" spikes .....	—	—	—
Sheets, Staff., in London .....	9 15 0	10 0 0	—
Plates, Staff., in London .....	9 10 0	10 0 0	—
Hoops, Staff., in London .....	8 15 0	9 0 0	—
Nail rods, Staff., in Lon .....	7 8 0	7 15 0	—
STEEL.	—	—	—
English, spring .....	14 0 0	23 0 0	—
" cast .....	25 0 0	45 0 0	—
Swedish, keg .....	15 10 0	—	—
" flag, ham .....	17 10 0	—	—
LEAD.	—	—	—
English, pig, common .....	22 0 0	—	—
" L.B. .....	22 0 0	—	—
" W.B. .....	22 0 0	—	—
" sheet and bar .....	22 15 0	22 10 0	—
" pipe .....	22 15 0	22 10 0	—
" red .....	23 10 0	—	—
" white .....	25 10 0	29 10 0	—
" patent shot .....	25 10 0	—	—
Spanish .....	21 10 0	21 15 0	—
QUICKSILVER.	—	—	—
Flasks of 75 lbs., ware .....	9 10 0	—	—
SPELTER.	—	—	—
Silesian or Rhensian .....	22 15 0	23 0 0	—
English, Swansea .....	23 10 0	—	—
Sheet zinc .....	26 10 0	27 0 0	—

\* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; I. X. 6s. per box more than I. C. quoted above, and add 6s. for each X. Tern-plates 2s. per box below tin-plates of similar brands.

REMARKS.—Whatever may have been the shortcomings of the former part of the year in regard to commercial affairs, we think there is little cause for complaint of the amount of business doing lately, especially in certain descriptions of metals; and if the demand should continue as satisfactory to the close of the quarter it will make up in some degree for the deficiencies of many of the previous months; and, in the event of any marked increase, the aggregate of the whole year's business may not, perhaps, prove so much below the average as was originally feared. It would, doubtless, be taking rather too sanguine a view after such a very long period of prostration, to expect that the year will compare favourably with those of its immediate predecessors; but a return to anything approaching normal activity, whereby the equilibrium of our markets might be attained, would undoubtedly go far to redeem the past, greatly help to restore confidence, and ensure stability for the future. From force of circumstances the ideas of mercantile men have undergone a wonderful change, and are so much modified to what they once were that a moderate business gives as much satisfaction now as transactions of an extensive character did formerly, the severity of the lesson derived from the late depression having exercised in this respect a salutary influence. Nevertheless, however much experience may be needed by the cautious part of the community, yet there remains some few who totally disregard the discipline of adversity, and who, in the pursuit of gain, are still fond of incurring liabilities to an unwarrantable extent beyond their capital; and were it not for the easy facilities of finance afforded by the various banking establishments, they would be compelled in a very short time to suspend or at least to limit their engagements more within their resources.

The advances made by the banks on documents are generally inadequately covered, and sometimes without margin; the consequence is that a number of small capitalists are enabled to extract an extravagantly large business, quite out of all proportion to their means, to the injury of the good old firms of respectability and standing, but not only is the trade greatly divided to what it was formerly, but merchants have to be content with a smaller percentage of profit, while at the same time the amount of risk is increased, rendering the carrying on of a purely commission business more precarious and less profitable. There is, however, another matter which threatens in course of time to annihilate the merchant almost entirely, and that is the strong tendency fast growing up on the part of consumer and producer to deal direct. Such a system should meet with the strongest and most determined opposition, as it will drive business into a terribly contracted sphere, and that certainly is not calculated to promote the general welfare of the mercantile men, but, on the contrary, will if allowed to expand ultimately be their ruin. Let everyone keep to his legitimate calling, and not encroach on the business of his neighbours, or attempt to deprive him of his fair share of gain. Merchants ought not to have the brokers' commission any more than manufacturers the merchants' profit, and it is an act of gross injustice whenever it is done.

COPPER.—On Saturday last the charters of Chili during the first half of October were telegraphed as 2300 tons, being 1100 tons in bars and 1100 tons of ores and regulus for England, and 100 tons of bars for the Continent. Although the quantity is an excess of the average, the announcement did not depress the market, for on that day 75s. was realised for two or three months prompt, and 77s. for Channel. The demand continued good on Monday, and a further improvement was effected, 75s. 10s. being paid for cash, and January prompt, and 77s. for Lota in Swansea. Walaroo cast participated in the rise, and sellers obtaining 84s. and 86s. 5s. cash. Tuesday's sales were also upon a satisfactory scale, and imparted greater firmness to the market. The prices paid for g.o.b. were 75s. 10s. to 76s. 5s. cash, and 77s. one month, and the same for named brands. The difficulty of securing any quantity of raw material, and the continued rise in value, compelled the smelters to advance their rates 3s. per ton, though being raised to 84s., best selected 82s. sheets and sheeting 80s., and yellow metal for home consumption 82s. On Wednesday the published returns of the deliveries of Chili during the

last half of November showed the statistics to be less favourable than the previous statement, the stock having increased about 100 tons in Liverpool and Swansea, but in Havre the increase was no less than 1100 tons. The total quantity of all descriptions of English and foreign in London, Liverpool, Swansea, and Havre, including that which is afloat and chartered, amounts to 39,300 tons, or an increase of 834 tons. The market on Thursday was steady, and a fair quantity of Chili changed hands at 76s. 10s. to 77s., cash and arrivals, and 15s. 6d. per unit paid for a cargo of ore.

To-day the market opened strong, and the increased stock appeared to have made no unfavourable impression; buyers came forward, and freely paid 77s. for forward parcels, but beyond this price there was no disposition to move, and sellers asked 77s. 10s. to 78s., but a small quantity only was reported at 77s. 10s. forward, the cash price of g.o.b. varying between 76s. 10s. to 77s. 1s. 6d. Wallaroo, 86s.; Burra Burra, 84s. It is not surprising after such a good business that the market should remain passive for a few days, but the fact of the principal part of the stock being held off for higher prices will, probably, soon give another impulse, and if the demand continues equal to what it has been lately 80s. seems a figure that may be safely reached.

IRON.—Another week has elapsed without any change taking place in the general appearance of the market, prices remain much about the same as last, and the demand is still extremely limited, with no signs of improvement. The prospects are exceedingly gloomy, and there is greater probability of prices declining than otherwise. The end of the shipping season is drawing near, and there will soon be a dearth of orders. As it is, many of the works experience the greatest difficulty in securing work for only a few days a week, and when they get into the winter quarter their troubles are more likely to increase than decrease. In the shipping trade there is nothing better to hope for until prices are lowered, and as regards the home trade dealers do not care to accumulate stocks towards the end of the year. The little demand that may hereafter exist will be quite inadequate to sustain the whole manufacturing iron trade of the country, and there is evidently no alternative but to reduce prices to such a point as cannot fail to produce the desired effect. It is not a matter of 2s. 6d. or 5s. per ton that will be sufficient to attract the notice of buyers, or induce them once again to buy for stock, but the reduction must be about 20s. per ton before any impression will be made, and we might then hope that the demand would steadily increase, and that we should be able to hold our own against the production of foreign makers.

With the exception of Scotch pigs, no speculation is going on, and even in pigs the transactions here are very trifling. No one has any faith in an advance of prices, and consequently buyers are very limited in their requirements, and these in a short time will no doubt be further diminished. We believe both masters and men have lost their opportunity by waiting so much time before coming to an amicable settlement; whereas if they had come forth boldly a month or two ago, and faced the matter in a decided manner and in a spirit of equity, something to their mutual advantage by this time might have been concluded, and the trade, instead of languishing, would have had a fair chance of recovery. To go on in the present unsatisfactory way is merely postponing the evil day, and in the meantime the business which might have been obtained is going away to Belgium, where prices and wages are lower than in England. The working classes of England are forfeiting the good opinion and sympathy of their fellow-countrymen by adhering so persistently to a scale of wages that is not in any way justified by existing circumstances.

In Scotch pigs slight fluctuations have occurred, and the closing price of mixed numbers is 57s. 6d., market closing firm. The stock in store is 195,524 tons, being an increase of 5880 tons, with warrants in circulation for 81,600 tons.

SHIPMENTS.

Week ending Oct. 28, 1876 .....

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promising appearance, and the productive ground is widest in the bottom of the driving.

St. John del Rey, 340 to 360; the latest telegram received gives the profit for September at 6800*l*., and the produce for the first eight days of October at 10,500 oits., worth 4068*l*., the ley of the ore being 77. There appears to be no doubt but that the comparatively low produce of the ore recently operated upon is due to the necessity of enlarging certain workings in the process of opening out the mines, so that such lower produce is only regarded as temporary. Don Pedro, 2*s*. to 4*s*.; the produce for the first division of October was 1500*o*its. Argentine, 5*½* to 6*½*; from advices received to-day the mines would appear to be opening up in an unexampled manner for richness. The average assay of the ore from the bottom of the mines is considerably above 2 ozs. gold per ton. All that is required would seem to be perfecting the machinery to render this a profitable undertaking. Almada and Tiritó,  $\frac{1}{2}$  to  $\frac{3}{4}$ .

American Mines generally have been more active than for some time past, with a more pronounced improvement in quotations. Richmond has declared its dividend of 7s. 6d. per share, and the shares have responded in market value. Plumas-Eureka have met with increase inquiry from those, it is said, who have received private advices from the mines, and Exchequer have also advanced.

In California, the Golden State, is producing daily about \$40,000 in gold, \$100,000 in silver, \$8000 in quicksilver, \$5000 in copper, \$7000 in coal, and \$200,000 in iron, antimony, zinc, and other minerals, equal to an annual output of \$1,000,000. Nevada the Silver State, is yielding daily \$125,000 from its mines of \$3,500,000 in lead, and \$3000 in other minerals, making a total of \$75,000 in gold, or \$63,000,000 per annum. Colorado is producing 15,000 tons of \$210 every 24 hours, 20 yearly, and 11000 in other minerals, or \$26,000 daily, equal to \$7,500,000 yearly. Utah is credited with a daily output of \$19,000 in gold, \$2000 in other minerals, equal to \$6,900,000 per year. Idaho, Montana, Oregon, Arizona, and New Mexico yield a daily output of \$100,000 in gold, \$1,700,000 in silver, and \$1800 in base metals, giving a total of \$33,000 in gold, \$1,715,000 annually. Adding together these items, it appears that the aggregate production of the western United States throw daily into the markets of the world not less than \$34,000 in pure bullion, and \$48,500 worth of other metals and minerals. Each hour of the 24 gives rise to \$15,520 worth of metal, and each minute of the hour produces \$258 worth of Metal value.

It is only by closely examining such data that a full comprehension of their significance can be grasped.

Richmond Consolidated, 10 to 10½; the usual telegram gives the week's run at \$19,000. The two new furnaces are re-started. The refinery this week produced four bars to the value of \$25,000. The manager's report for the previous week only reached the London office on Monday, and a similar delay has occurred again this week. It does, it appears, to some detention of late in the mail packets. The report for last week states the progress in the drift runnings from the 700 ft. level to intercept the ore body making down from the 600 ft., and that the drift from 10 to 150 ft. may be the reason the ore body is not so large. The drift from the 600 will have to be driven 150 ft. more to reach and store. Another sink 70 ft. in good ore from the south-east part of the great chamber, where winzes are sunk, at the 500 ft. level. Communication has at last been effected between the Laetse Tunnel and the extensive ore body discovered on the west side of Ruby Hill. The height of the ore is ascertained to be 150 ft. and, as it is rich in gold, it is expected to add considerably to the future smelting results. The machinery appears to have caused considerable trouble for the past month, but the defects are now remedied, and all the furnaces again at work. The directors have declared another dividend of 100 s. 10 d. per share, payable on and after the 8th. The shareholders will thus have received in dividends 9 10ths of the value of the Richmond Mine.

original of the Richmond Mine. Eberhardt and Aurora, 8½ to 8½; there is nothing new from these mines. Eschequer, 2½ to 2½; the cross-cut in the 400 ft. level had at the date of the last advices, reached the casing or flooken of the lode. Other points continue to open out well. I. X. L., ½ to 1½. The market for Hydraulic or Gold Washing Companies' shares has not presented any feature of interest—shares remain steady, at quotations. The near approach of the rainy season is referred to as justifying closer attention to this class of mining, as nearly every company represented is described as being this year in a better position for using water to profit than they have before been. Deposits of auriferous gravel have been found in many parts of the world—Italy, Australia, the Columbian States, New Zealand, and through the Southern and Western States of America; but in no place has it hitherto been so systematically worked, nor produced such good returns as in California. There are processes in use by which the gold can be easily and cheaply extracted, and many millions of dollars have been expended in the works necessary to permit of the gravel being dealt with advantageously. This branch of industry, though so little known or appreciated here, is one of the most popular and lucrative industries in California, and every year shows a larger amount of capital and labour employed in this direction. Blue Tent, 3 to 3½; the latest news continues satisfactory and the banks are presenting a promising appearance for the coming season. Cedar Creek, 8 to 8; the completion of the tunnel to the Baker claim is most satisfactory, as it will afford very fine gravel for the coming year's work.

Sweetland Creek, 3-16ths to 5-16ths; is washing, and, the agent thinks, with fair results. Birdseye Creek,  $\frac{8}{16}$  to  $\frac{7}{16}$ ; the agent writes that he is pushing on with the Waloupa tunnel as quickly as possible, and will have everything in readiness by the time the rains commence. Oregon (pref.),  $\frac{1}{4}$  to  $\frac{1}{4}\frac{1}{4}$ ; the branch ditch and tunnels are being rapidly extended, and, the agent thinks, will be completed by the time the rains set in. Gold Run,  $\frac{3}{4}$  to  $\frac{3}{4}$ ; preparations are being made for early washing. An incline leading from the tunnel to the surface of the gravel is being run; powder-drifts are being driven under the banks, so as to be in readiness to use when desired. Malpas and Malabar have shown no alteration; owing to the revolution in Colombia no advices were received from either mine by the last mail, but private information from the State would seem to promise that the country may soon return to a settled condition, and in the meantime it is believed the working of the mine has not been interfered with.

The Market for Shares in Lead Mines has participated in the general feeling that the increased firmness observable is likely to be permanent. Van, 36 to 38; the lode in the 105 is improving, and is letting out gas and water very strongly. The driving of the 90 ore has been resumed; lode worth 300, per cubic fathom for lead ore. The other parts of the mine are unchanged. All progressing in a satisfactory manner, and the erection of the new engine fast drawing towards completion. Great West Van, 10s. to 12s. 6d.; the improvement in the 4th, east of Eliza's, taken in conjunction with the nature of the ground in the 34 ft. level, above this point, indicates that the 50 fms. of ground separating the 46, east and west of old shaft will be found well impregnated with lead. The sinking of Eliza's shaft will be continued at once. Van Consols, 2 to 24; all the work connected with starting the new drawing machinery is now close to completion, and the new engine will now be soon set to work. 24 to 23; the 28 west is now in first-class ground, and the manager expects lead will be met with in large quantities as the drainage progresses. The shaft will penetrate the lode next week. Groswinton, 5 to 6; the manager reports a "splendid lode in the 68 west," showing a great improvement since date of last report, and every other point looking well. A parcel of 100 tons of lead, the produce of four months' work, has been shipped to the market.

range during the year and activity there would have been intended on Monday, creek. The whole foreign mines. As to the conclusion position as the main attraction connected at higher own to it from the west. With a view well acquainted at a brief history of the four weeks' working, was sold on Monday at 15s. 7s. per ton, an advance of 18s. 6d. per ton over the previous month's sale. The Valley, G 6 to 7; the lode in the winze below the 10 is worth 5 tons of lead per fathom, and improving. The manager says the ground is lengthening very rapidly to the eastward. In the 10 the ore in the adit level the lode is very large, and yielding a few dollars of ore. This is likely to prove a productive point. West Wy Valley, 3 to 4; the lode in the 40 west and 26 east is yielding good ore in large quantities. All other points are progressing favourably. Steeping ground rapidly accumulating. West Goginan, 13 to 2; the 24, and also in the winze below the 12. Prospects are considerably encouraging. Llanidies, 3 to 33; the lode recently cut in the adit sinking below the 72 is steadily improving, and now worth 2 to 2 tons per fm. It looks promising for the next level (the 84). Pennerly, 13 to 13; the lode in the 130 east is increasing in size, and letting out a little water. The 120 west is a very promising lode, and has a large cavity in the forebreast; it is expected that this will lead to a bunch of ore. The 80 west, on Warm Water, is worth 3 tons per fathom, and the winze below the 70 is also of the same value. Potter's Pit portion of the sett does not show much alteration; the ends are being steadily pushed forward, and are nearly all of value. Pateley Bridge, 3 to 33; Lamb vein in the 100 is yielding about 25 cwt. lead ore per fathom; west end is very strong and masterly, and worth 14 tons per fathom. Fielding

vein is producing 1 ton lead ore per fathom. The cross-cut in the 20 towards Lumb vein is close on to the lode, and an important discovery may be made any day. The cross-cut from the bottom engine-shaft is being pushed on with all speed; ground favourable and congenial for production of mineral. West Pateley Bridge, 5 to 54; there is no change reported from the mine. The level east of winze from No. 2 shaft is worth 16/- per fathom; other parts without alteration, and all work steadily progressing. Penstruthal; the lode in the shaft continues to present signs of a rich copper mine being opened up as it is sunk. The 58 and 46 ends east and west also looking well. The next level will be reached during this month. Cathedral (new issue), par to  $\frac{1}{2}$  prem.; the rocks of copper ore broken from this mine during the week are said to be of such a character as have not been seen for more than 20 years in Cornwall.

Subjoined are the closing quotations:—

Assheton,  $\frac{3}{4}$  to  $1\frac{1}{4}$ ; Carn Brea, 40 to 45; Devon Great Consols,  $\frac{2}{5}$  to  $\frac{3}{4}$ ; Dolcoath, 36 to 38; East Caradon,  $\frac{3}{4}$  to  $1\frac{1}{4}$ ; East Van, 8 to  $8\frac{1}{2}$ ; Glyn,  $\frac{2}{5}$  to  $\frac{2}{5}$ ; Great Laxey,  $\frac{1}{10}$  to  $\frac{2}{5}$ ; Great West Van,  $\frac{3}{4}$  to  $\frac{5}{8}$ ; Hington Down,  $\frac{1}{2}$  to  $1$ ; Leadhills, 7 to  $\frac{7}{8}$ ; Marke Valley,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; Parys Mountain,  $\frac{1}{2}$  to  $\frac{3}{4}$ ; Pateley Bridge,  $\frac{3}{4}$  to  $\frac{3}{4}$ ; Teneley,  $\frac{1}{4}$  to  $\frac{1}{4}$ ; Penruthra, 9s. to 11s; Roman Gravel,  $\frac{1}{4}$  to  $\frac{1}{4}$ ; Tankerville, 10 to 10 $\frac{1}{2}$ ; Tincroft, 19s. to 21s; Van, 36 to 38; West Van,  $\frac{3}{4}$  to  $\frac{3}{4}$ ; West Asheton, 1 to  $1\frac{1}{2}$ ; West Basset, 4 to 5 to 6; Wharfedale, 18 to 19; West Tankerville,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; Wharfedale,  $\frac{2}{5}$  to  $\frac{3}{4}$ ; Wharfedale, Grenville,  $\frac{1}{2}$  to  $1$ ; Almada and Tiritio,  $\frac{1}{2}$  to  $\frac{3}{4}$ ; Argentine,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; Birdseye Creek,  $\frac{3}{4}$  to  $\frac{3}{4}$ ; Cape Copper, 37 to 39; Cedar Creek,  $\frac{3}{4}$  to  $\frac{3}{4}$ ; Chontales,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; Colorado Terrible, 1 to  $1\frac{1}{2}$ ; Condes de Chili,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; Don Pedro,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; Eberhardt and Aurora,  $\frac{3}{4}$  to  $\frac{3}{4}$ ; Emma,  $\frac{3}{4}$  to  $\frac{3}{4}$ ; Exchequer,  $\frac{2}{5}$  to  $\frac{2}{5}$ ; I.X.L.,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; Flagstaff,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; Frontino and Bolivia,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; Javali, 10s. to 12s.; Kapanga, 6 to 6 $\frac{1}{2}$ ; Malpasso,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; Malabar,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; New Pacific,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; New Quebrada, 3 to  $\frac{3}{4}$ ; Pestarena,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; Richmond Consolidated, 10 to 10 $\frac{1}{2}$ ; Rica,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; St. John del Rey, 34s to 35s; San Pedro,  $\frac{3}{4}$  to  $\frac{3}{4}$ ; Sierra Buita,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; Plumas Eureka, 2 to  $\frac{2}{5}$ ; South Aurora,  $\frac{1}{2}$  to  $\frac{1}{2}$ ; Sweetland Creek, 3 to 5 to 5; Tecoma,  $\frac{3}{4}$  to  $\frac{3}{4}$ ; United Mexican, 2s to  $\frac{2}{5}$ ; West Pateley Bridge, 8 to 5; Blue Tint, 3 to  $\frac{3}{4}$ ; Oregon Pref., 4 to  $\frac{4}{5}$ .

**COLLIERIES.**—There has been little doing during the past week in colliery, or indeed in any other shares; but the few transactions which have taken place have shown that the market is steady, with a tendency to firmer prices. The reports from the coal districts all all more or less favourable, the demand for house and gas coals having considerably increased, and the prices for these qualities consequently showing a slight rise; while the trade in steam coal, which has grown very largely for many months past, shows no signs of weakening. With a better state of affairs in the coal trade, some small sections of the miners have shown a desire to force wages up. One or two strikes have occurred, but have ended in the men giving way. In other cases, the questions in dispute have been referred to arbitrators, with the result of decisions in favour of the employers; as, for instance, in the Ashton district, where the Bishop of Manchester acted as arbitrator, and wages were reduced 8½ per cent. In South Staffordshire a meeting of coalmasters was held, on Monday last, to consider the men's claim for an increase of wages; and it was decided that rates should remain without alteration. The export trade in coal still shows an increase. In South Wales alone 10,000 tons of coal were shipped last week, the shipping being unusually active. In the iron trade, the condition of which to such a large extent affects the coal market, is improving, and shows many signs of further revival. Large orders are now daily expected for the supply of iron for the erection of the coming Paris Exhibition; and several of the railway companies are either now in the market, or are expected shortly, as large buyers. This will all tend to stiffen the prices of coal; and now that the market has been brought to a more normal condition, the probability of a rise, and prices, as is already evidenced by a rise in the London market, will make an upward movement.

The works in both the Allentown and Lily Hall Companies are said to be progressing rapidly, and greater attention is being devoted to the shares in this company. It is confidently expected that the pits will be finished in the course of two or three months, and the company will then be in a position to increase the output, as already reported, and if the unbroken success which has hitherto attended the company's operations continues, as there is no reason to doubt it will, the shares will be amongst the best of their class on the market. Their present price is 3½ to 4. We understand that the company's debentures have been well subscribed for, but not as yet to a sufficient extent to provide the funds necessary to finish all the new works, and it would seem very desirable that the shareholders themselves should take up the balances of these debentures at once, as all the money raised upon them will be devoted to improving the colliery and the company's position, and enhancing its intrinsic value of the shares. The following are the closing prices:—Curdiss and Swansie, 1½ to 2. Thorp's Gawber, 3 to 3½. Newport Abercrom, 4½ to 5. Bilson and Crump, 7½ to 8. West Mostyn Preference, 2½ to 3½. New Sharlston Preference, 3½ to 4½. Cannock and Huntington, 4. Hamstead, 9½. Ivy House, 10. Sandwell Park (new), 24½. Spon Lane, 3½. West Cannock, 19½.

At Redruth Ticketing, on Thursday, 1165 tons of copper ore were sold, realising 5975*s*. 17*s*. The particulars of the sale were—Average standard, 106*l*. 7*s*.; average produce, 73*l*.; average price per ton 5*l*. 2*s*. 6*d*.; quantity of fine copper, 85 tons 15 cwt*s*. The following are the particulars:—

Date.	Tons.	Standard.	Produce.	£.	s.	Per unit.	Ore copper
Oct. 5. 1541	298	15 0	73 <i>l</i> .	4	9 6	12 <i>s</i> . 3 <i>d</i> .	£61 3 6
" 19 <i>l</i> . 3328	111	11 0	55 <i>l</i> .	3	11 6	12 7½	63 1 6
Nov. 2. 1165	106	17 0	73 <i>l</i> .	5	2 6	13 11	69 12 0

Compared with the last sale, the advance has been in the standard 4*l*. 10*s*., and in the price per ton of ore about 7*s*.

**SOCIETY OF ENGINEERS**—On Monday a paper will be read, on the Conversion of Peat into Fuel and Charcoal, by Mr. Charles E. Hall.

## ASSAYS AND ANALYSES

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**BRITISH LEAD MINES**, with MAPS, and a NEW  
 PREFACE:  
 Containing an analyses of Railway and Lead Mining Shares and Dividends.  
 By J. H. MURCHISON, F.R.G.S.  
 London: At the Author's Office, 8, Austinfriars, E.C.

"Contains a good deal of information that may be useful at present. Mr. Murchison's theory is briefly that on the average British Lead Mines have less of the lithony element in them than any others, and the lead ores seem to supply the rest of the lithony. Interested in this industry will find his facts and observations worth reading."—*Times*.

"Calculated to be a great benefit to investors."—*Mining Journal*.

"We have great pleasure in recommending his treatise."—*Morning Post*.

"We invite capitalists to look into this means of investment."—*Money Market Review*.

**M**R. T. E. W. THOMAS, SHARE BROKER,  
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Buyers.				Sellers.			
Devon Great Consols	£ 3	3	£ 3	3	Penstruthal	11s. 3d.	13s. 9d.
Eberharit	8	3	8	3	Plymliammon	5s.	7s. 6d.
East Caradon	8	3	8	3	Prince of Wales	4	4
East Wheal	8	3	8	3	Richmond	£ 10	£ 10
Eschequer Gold	2	2	2	2	Roman Gravels	13	14
Flagstaff	2	2	2	2	Rookhope	16s.	17s. 6d.
Frontino	1	1	1	1	Santa Barbara	2	2
Glenroy	3	3	3	3	San Pedro	12s. 6d.	17s. 6d.
Glyn	2	2	2	2	Sierra Buttes	5	5
Great Laxey	20	1	21	1	Stichin Gendurrow	5	5
Javelin	10s.	12s.	11	11	Tunkerville	10	10
Ladywell	1	1	1	1	Tincroft	18	19
Leadhills	7	7	7	7	Van	37	39
Marke Valley	1	1	1	1	Van Consols	2	2
North Laxey	12s.	14s.	12	12	West Asheton	1	1
New Quebrada	3	3	3	3	West Chiverton	18	18
New Zealand Kapanga	2	2	2	2	West Tanserville	1	1
Paral Mountain	12s.	14s.	12	12	Wheal Crebor	2	2
Pateley Bridge	2	2	2	2	Wheal Grenville	1	1
Pennerley	1	1	1	1	Wheal Ynny	1	1

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**LLANRWST.**  
**CAUTION—TO GUARD SHAREHOLDERS.**

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The mine is looking splendid throughout, bordering upon high percentage dividends, which will be lasting. It will doubtless be the greatest prize in the country.

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can sell the following **SHARES**, at prices annexed:—

10 Altamir Colliery.	40 Javall, 1s. 9d.	100 Prince of Wales, 6s 3d
40 Cedar Creek, 10s. 9d.	25 La Manche, 4s. 10s.	75 Pestarena, 4s. 9d.
150 Clee Hill, 2s. 6d.	15 Ladywell, 3s. 9d.	250 Marys Mountain, 13s 6d
30 Dutch Rhenish- ruid, 4½ p. marm. (£3	40 Marke Valley, 28s. 9d.	25 Pennerley, 11 8s.
10 Derwent, 25½.	75 Malabar, 7s. 9d.	30 Rookhope, 17s. 3d.
100 Don Pedro, 3s. 3d.	30 Malnaso, 15s. 9d.	100 Rica, 4s. 6d.
10 East Van, 23½.	20 Nev-Quebrada, 22 10s.	600 South Aurora, 6s. 9d.
25 Exchequer, 22 4s.	40 North Laxey, 14s.	25 Santa Barbara, 22 6s 3d
50 Frontino, 11 13s. 6d.	50 N. y. Glo & Blaina 23½	40 Taitybont.
15 Glenroy, 43½.	20 N. Zealand Kapanga, 16½.	20 Van Consois, 22½.
25 Glynn, 22 13s.	15 Pennant.	25 Wheel Greenville, 15s 6d
50 Gt. West Van, 9s. 3d.	80 Port Phillip, 9s. 3d.	20 W. Wye Valley, 23 8s.
40 I. X. L., 21s. 3d.	50 Penruthral, 11s. 9d.	15 W. Tankerville, 11½.

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### Notices to Correspondents.

\* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be read on receipt; it then forms an accumulating useful work of reference.

**BERNHARDT AND AURORA.**—I shall be glad to learn how much in the aggregate has been paid up in this company—when the next call is due—and what is its amount, and when the next meeting will be held?—A. M.: *Birkenhead.*

**SIR.**—When will your old correspondent, Mr. Geo. Henwood, oblige your readers with his long-promised remarks on the mining district of Teesdale, in the county of Durham?—*ENQUIRER.*

**ORE-WASHING MACHINERY.**—In reply to "R."s question, as to which is the best machine for separating blende from lead. The latest machine of this class is that illustrated in last week's Journal—Taylor's Drum Dresser, which is used by the Minera Halvans Dressing Company, near Wrexham, North Wales, solely for this purpose, and where, if "R." will forward his name and address to 15, Newgate-street, Chester, he can see the machine in operation.—H.

**LECTURES ON MINING.**—"H. V. T." (London Wall): Prof. Smyth's lectures have been specially reported for the *Mining Journal*; the reports are the copyright of the proprietors, and they will not be reprinted in separate form. Complete sets (one or two) of the Journals containing the lectures can still be had at 7½d. per copy, including postage.

**SHARE DEALING.**—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broker through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

**RECEIVED.**—"Copper" (Redruth):—"R. D. A." (Sydney): The map and book not yet received.—"Shareholder" (Bath) should address his letter to the secretary of the company, who will readily send the information.—"A. B." (Dundee): The proceedings at the meeting were fully reported in the Journal on the following day.—"Amateur" (Highgate):—"Cornubiensis":—"P. M." (Manchester): We should like to have a description of the invention.—"W. C." (Buenos Ayres): Next week—"Shareholder" (Exeter): Next week—"E. S. R."

## THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, NOVEMBER 4, 1876.

### ENCOURAGING TRADE FEATURES.

If above all things truthfulness and impartiality is the duty of the journalist, to hold like the player the mirror up to Nature, and "show the very age and body of the time his form and pressure," it is no less his duty to discourage everything calculated to hinder Nature from showing herself as she willingly would. In matters of trade and commerce pretty much the whole civilized world is now not wholly unlike a patient about to commence the period of gradual recovery which follows upon the successful treatment of fever. At such a crisis we hold it to be the duty of all trade journals to see that every encouragement be afforded to the recovery which it may well be trusted has begun to appear, sternly discouraging all pessimist forebodings in no way calculated to assist in the return of full trade vigour, but certain, on the contrary, to hinder the restoration for which all profess to long, and after which all should aim. In this spirit we would direct the notice of the readers of the Journal to two or three features of special encouragement in connection particularly with the coal and iron industries.

To the remarkable vitality displayed by the pig-iron trade of the Cleveland district we directed prominent attention three weeks ago. Let us add that, with reference to the future, there are great iron-producing concerns thereabouts who have orders on their books enough to consume the whole of their make up to and beyond Christmas. Very satisfactory indeed is the experience of one North of England considerable furnace proprietor. To our knowledge he left home a few weeks ago for a brief holiday, there being at his furnaces an accumulation of iron without precedent in his experience. Upon his return he found that not only was the whole accumulation cleared off, but that there had been sold all that he could make in the ensuing three months. It was only a fortnight ago, when a leading hematite iron producing firm in the kingdom had on their books orders aggregating no less than 200,000 tons, and the recent exports of coal from the steam and other collieries of the North of England and South Wales have been without precedent in the history of certain of the ports in those parts of the kingdom. We all know that alike as to iron and coal the prices at which business is now being done are much lower than should characterise business; but that it should be possible to trade upon any terms is cause for encouragement, since the malady from which we have not yet ceased to suffer has not been local as to one nation, but has been of world-wide application. While this is happening as to great transactions, the indications from the hardware centres are conclusive that a business is being done between manufacturers and the merchants who distribute the iron and steel which they use, and the makers who roll it which is steadily augmenting. It is within our own experience that iron merchants whose stocks represent in ordinary times no less than 30,000,000, are at this moment doing a larger export business than at any previous date in their half-century of trading. Simultaneously there are extensive consumers of materials of a class hardly less of interest to our readers, of whom we have to report that they have given to their managers instructions to buy in raw materials largely in advance of either present or early probable requirement, the conviction being that in relation to those requisites quotations have touched their minimum. It may be that in the North of England there are still finished ironworks altogether standing, and that, notwithstanding the vast production of pig-iron thereabouts, a larger number—as is the fact—of stone-getters are out of employment than has been noticed for some time past, but we hold that the indications to which we have directed notice are such as should exercise nothing but an encouraging influence upon the current of transactions.

Going further afield, let it be repeated that in the United States, with whose trading prosperity our country is so sympathetic, there are manifest indications of improving business in nearly all the branches; with a steady creeping-up of the exports of steel, and such like raw materials, as well from Wolverhampton and other places as from Sheffield. Then how stimulating it is to note that without any Governmental interference an improvement has begun to manifest itself in reference to the silver currency question, which so recently threatened consequences of the gravest character touching our business with a customer the value of whose imports and exports last year was no less than 100,000,000—its own increase upon the previous year of 6,400,000. There are at least indications that the downward movement in the value of silver may shortly be reversed. A Bill is now before the German Parliament for increasing the amount of silver coinage to the extent of 10,000,000. The law now provides for only 20,000,000, and there are grave complaints of the want of silver coins in various parts of the country. The Bill is presented by the Chancellor of the Empire, and, although receiving some opposition, it is, we learn, very likely to be passed. Then, again, there has lately been a sensible diminution in the production of silver in some of the principal Nevada mines, and this may for some time to come have an appreciable influence in curtailing the aggregate supply. As soon as these reverse movements begin to be realised the effect will be much greater than their own importance would seem to justify, for we must remember that the prevailing alarm respecting the fall in silver has led to changes in the mode of conducting business between England and India which have tended to lower the exchanges far beyond the point to which the simple fall in silver itself would have brought them. All the nations have for a long time past been buying only from hand to mouth, everyone has seemed to partake in the general feeling of insecurity, dreading further falls in value. That dread is now gradually disappearing. This, in connection with the enormous accumulations of unused money, is in the highest degree significant. The bullion in the various banks of Europe is largely in excess of all previous years within the memory of most men. It was only a few days ago that the bullion in the Bank of France stood at 83,800,000, in the Bank of England at 33,194,000, in Germany at 25,000,000, in Austria at 13,000,000, and in the Netherlands at 12,967,000. It is in every way cheering that this money exists: it

only wants a little increase of credit and enterprise to lead to an early return of very general business prosperity throughout the whole trading world.

### WORKING COAL UNDERNEATH THE SEA.

Recent events in the North of England, and more especially the failure of the Whitburn Coal Company, who have been compelled, after an expenditure of more than 100,000, to abandon as unpracticable under existing conditions their attempt to sink for coal on the coast between Sunderland and Tynemouth, have directed prominent attention to the subject of working coal underneath the sea. The great northern coal field comprised in the counties of Durham and Northumberland has a frontage to the sea of many miles, and in not a few cases the owners of the collieries nearest to the German Ocean have taken from the Crown the lease of the coal for three miles underneath the sea. Nor can it be doubted that in the future, and probably before very long, vigorous attempts will be made to work the coal beneath the bed of the sea. Experience elsewhere has proved the practicability of doing this, and upon the doing of it a great deal depends so far as the duration of our coal supplies are concerned. It is evident from the fact that the owners of the Ryhope, Wearmouth, South Hetton, Hilda, Westoe, and other collieries have leased all the coal, or nearly all, on the sea board between Tyne Dock on the one hand and Castle Eden on the other, that they contemplate submarine working, and as the matter is one that must engage practical, if not paramount, attention before the lapse of many years, we may appropriately glance at the considerations and difficulties that now constitute its environment.

It has been proved by an examination of the Northern coal field, between the rivers Wansbeck and Tyne, that the coal measures on that coast rise to the sea. The bottom of the basin, speaking roughly, coincides with a line drawn from North Seton Colliery, and passing through Newham, Seaton Delaval, Backworth, and Wallsend, to Jarro. On the east of the line along the coast the coal measures rise to the sea, and on the west side they rise to the west. Between Jarro and Monkwearmouth Colliery the beds are nearly flat. At Harton Colliery, close to South Shields, the beds are found to rise to the sea, or a few degrees to the north of east, and at the Ryhope Colliery, near Sunderland, so far as the workings have extended to the sea, the dip is still to the east. Therefore it has been assumed that the bottom of the basin south of Wearmouth is under the sea, and that, in fact, the whole field is simply a basin, the eastern margin of which is out at sea. As far, however, as the workings at Harton and other collieries have extended towards the sea, the rise is very gentle, and there is no condition arising out of the configuration and formation of the coal measures to preclude the possibility of working coal underneath the ocean for a very considerable distance. Something has already been done in this direction, but very little. Under Tynemouth Castle there is an old coal working to be seen at the cliff, where the coals visibly crop along the coast. Hilda Colliery is now to some extent worked underneath the sea, and so also is Ryhope, the principal colliery of its kind, if we except that of Wearmouth, on the whole of the north-east coast. We may here call attention to the singular circumstance that a series of hygrometric observations made in coal mines in the county of Durham showed that in Ryhope Colliery, beneath the sea, at a depth of 1560 ft., and at a distance of 2762 yards from the downcast shaft, the dry bulb was 73, and the wet bulb 71, while the relative humidity—100 being saturation—was 90.2. At Wearmouth Colliery, on the other hand, at a depth of 1640 ft., and a distance of 3216 yards from the bottom of the downcast shaft, the dry bulb registered 82.25, and the wet bulb 85.25, the relative humidity being 85.6.

A great deal has been done, although not in the northern coal field, to lift this question of submarine coal working outside the region of mere theory and speculation, and place it among the practical achievements of scientific men. The Hammer Colliery in North Wales, belonging to Sir GEORGE ELLIOT, has been worked underneath the estuary of the Dee for a considerable time, with about 100 yards of cover on the seam at its shallowest part, the stone drift rising at the rate of 1 in 100. In some places the stone coal has been worked with safety up to between 80 and 90 yards of the surface. The mode of working is to drive the board 5 yards wide, leaving a pillar of 5 yards, and the cut throughs are about 20 yards apart. On the Cheshire side of the Dee the Ness and Neston Collieries were worked many years ago by the COTTINGHAM family. The shafts of these collieries were sunk on shore, and tunnels were driven under the river to intersect the various seams of coal dipping under it; from these tunnels the coal was worked on the board and pillar or pillar and stall system. The depth of the shaft was only 55½ yards from the surface, and the coal was reached under the river at that depth, and worked to the rise to within about 30 yards of the surface. This, it may be thought, was running a good deal of danger, but no subsidence was ever observed, nor did the river water intrude upon the workings. At Whitehaven, on the north-west coast, the submarine working of coal has been carried out to a larger and more successful extent than anywhere else. The workings have advanced for more than two miles under the sea, in a line at right angles to the shore, the distance of this face from the pit being upwards of 3 miles. This working is about 150 fathoms below the bed of the ocean, but the coal is worked in the intermediate distance at all depths down to 60 or 70 yards. The dip of the coal is about 4 in. to the yard towards the sea, and the seam is 10 feet thick. The board and pillar system of working is adopted, the boards being driven 6 yards wide, and the pillars 20 yards, while the width of the cut through is about 5 yards. At 100 fathoms the whole of the pillar is taken out, but at 60 fathoms deep a certain percentage is left. At this particular spot the sea bottom is chiefly composed of rock, and there is a very strong sandstone just above the seam. At some of the mines on the west coast a good deal of damage has been done from the incursions of the sea. At Workington, a few miles further along the coast, the sea found its way into a colliery where they were incautiously taking off the whole of the coal at a very slight depth, and drowned a number of men. In the latter case also there was the peculiarly untoward condition of a gravel bed communicating with the pit to the rise. No support is left for the roof except the coal itself. In some places the main seam is divided into two, and worked as two separate seams 10 or 12 feet apart. The Whitehaven mines dip away to the westward under the sea, and, while the coal has been worked in some places at about 200 yards depth at low water, in other cases it has been worked at a depth of not more than 60 feet. About 48 per cent. of the coal is left in the total thickness of 10 feet.

Among the important questions relating to the mining of coal which the experience of the future will be called on to decide, we are bound to include that of how coal can be most safely, and at the same time most advantageously, worked under the sea. Some authorities are of opinion that a system of compartments should be adopted, allowing only a certain breadth of coal to be worked, with a barrier between, so that the workings might not be always liable to the risk of being destroyed when they had only been partially exhausted. In Northumberland some of the collieries are kept distinct, with the idea of working only one sea-face, with a barrier between it and the next. At Whitehaven the coal is worked in three districts, which are generally separated by troubles, but in some cases the system of working hitherto adopted has been such that all independent access from the shore is now cut off. One of the principal mining authorities in the North of England has enunciated the opinion that to make sea workings perfectly secure there should be two windings—one to the rise of the sea, and the other under the sea, because if the sea were to break in anywhere it would drown out the rise workings equally with the dip, that the boundary must be preserved from the seashore right away landwards, and there must be a second and independent shaft. In cases where coal has been leased under the sea on the Durham coast, it has usually been let in patches by arrangement between the lessor and the lessee, and, however undesirable it may be to make any restrictions in restraint of trade, it is obvious that too much care cannot be taken in dealing with such a formidable risk as that of an inundation of the sea. Sir GEORGE ELLIOT is of opinion that the depth at which the coal is met with on the Durham seaboard is a guarantee against the

sea breaking into the coal workings, and that instead of leaving barriers between the windings under the sea, which might be very inconvenient, and which windings, he calculates, will extend ten or twelve miles under the sea, it would be better not to be allowed to work within a certain distance of the bed of the sea. While saying this Sir GEORGE ELLIOT adds, most emphatically, that there should be some restriction imposed, so that it should not be permitted to work coal under the sea, or under rivers and estuaries, in intimate upon the question of the submarine working of coal, it is of more than usual value to know from so high an authority as Sir GEORGE ELLIOT that he believes there would be no practical difficulty in working coal 12 miles under the sea, by putting an air-shaft in the ocean at a distance of six or seven miles from the shore, and in sinking such a shaft he does not anticipate any obstacle that could not be easily surmounted. This is a bold view, and one that throws new light and opens up new possibilities with regard to the duration of our coal supplies.

Our remarks are intended to be suggestive rather than exhaustive of this subject. It needs not that we should further insist on its importance. Along the greater part of our eastern and western seaboard, in Scotland as well as in England, there are hundreds of millions of tons of coal which must sooner or later be brought forth from the legitimate domain of old Neptune, and made contributory to the maintenance of our industrial supremacy; and a failure here and there by the way will not deter our great engineers and industrialists from exerting renewed efforts to make themselves the masters of the situation.

### A GREAT BELGIAN COMPANY.

Progress has just been reported by the great Belgian mechanical concern known as the JOHN COCKERILL Company. The total turnover of 1875-6 was 1,161,052, as compared with 1,377,335, in 1874-5, and 1,607,759, in 1873-4. The rough profit realised in 1875-6 was 47,798, as compared with 65,066, in 1874-5, so that the company not only did less business last year, but the financial result was less favourable than in the preceding twelve months. The profits of last year were also more apparent than real, for after making sundry statutory deductions the balance remaining at the credit of the profit and loss account was only 10,332, and this balance is to be carried forward to the credit of 1876-7; so that the shareholders will receive no dividend for 1875-6. The prudence of this course will, probably, be admitted when we state that the debt due by the company to its bankers June 30, 1875, was 112,756, as compared with 108,903, June 30, 1875. These adverse balances represent, of course, the floating debt of the company, and the larger the amount of cash retained on hand the more manageable the floating debt naturally is. The fact is the JOHN COCKERILL Company has suffered like almost every other large mechanical undertaking in Europe from the difficulties and depression of the times, and the shareholders may, perhaps, be congratulated upon the fact that they emerged from 1875-6 without sustaining any positive loss. The financial position of the company will, probably, be improved and strengthened by the realisation of the Katzenberg estate at Antwerp, which has been expropriated for the execution of great maritime works at that port, and which is expected to produce more than 40,000. It should be remarked that the company has had some great works on hand on capital account for two or three years past, and that these works have absorbed its resources to some extent. These works have comprised the continuation and completion of a large establishment for rolling steel rails, with tools, engines, boilers, &c., and erected and equipped at a cost of 24,012. Sinking and masonry works have also been carried on at the Marie Pit, at Collard; foundations and buildings have also been put in for engines and boilers at the same pit, upon which an expenditure of 16,705 had been made to June 30, 1875. A further outlay upon the Marie pit is expected to be made in the course of 1876-7.

The staff employed by the company at the close of June, 1875, was 7920, as compared with 8510 at the close of June, 1875. The wages paid by the company in 1875-6 amounted to 379,346, as compared with 409,535, in 1874-5. The reduction in the aggregate amount of wages paid in 1875-6 was, of course, largely attributable to the diminution in the number of persons employed by the undertaking. The sum expended by the company for medical assistance in 1875-6 was 7682. The value of the work on hand at the close of June, 1875, was 219,200, as compared with 333,300, at the close of June, 1875. The value of the work on hand on Oct. 15, 1875, had risen to 267,480, so that the position of the company as regards the employment in store for it would appear to have somewhat improved during July, August, and September. At the same time, it should be remarked that the value of the work on hand on Oct. 15, 1875, was estimated at 410,280, so that the undertaking is less actively occupied than it was twelve months since. The difference between the two totals of 410,280 and 267,480, is due to the fact that in 1874-5 the company obtained orders from the Administration of the Belgian State Railways for 11,000 tons of steel rails, while the corresponding order secured in 1875-6 only amounted to 2000 tons. In the autumn of 1875 the steamer Egypt also figured in the company's order book for 33,000. As regards the business which the company has now in course of negotiation, it is either unimportant, or is secured with considerable difficulty. The great continental railway companies and continental Governments might soon change this state of things if they chose, but they appear slow to do so. The French railway companies have, certainly, acted differently, and have given out considerable orders for steel rails, locomotives, and trucks; but French orders go, as a rule, to French industrialists. The Belgian Minister of Public Works has certainly ordered some thousands of tons of rails, but his orders are not at all comparable with those given out in France.

### "ALL THAT GLITTERS IS NOT GOLD."

The truth of this generally acknowledged aphorism is being practically illustrated by every day experience in reference to mining properties as a whole, but more especially to collieries. Some five or six years since the coal trade was prosperous. Our great manufacturers were active—every hand willing and able to work found employment—our merchandise was carried to every part of the world—there was a great demand for our goods of every description—our iron and steel works turned out more than their average make—the whole commercial pulse of the nation beat rapidly, if not soundly—and the prices of coal were inflated too high for permanent health. That was the time for the floating of bubble companies in connection with the iron and coal trades. Collieries already worked to a great extent, at least of their easily accessible and, therefore, money-making products, and other pits of comparatively worthless coals were no sooner placed in the market for disposal than interest persons formed limited liability companies for their purchase and working. An ornamental list of directors, an energetic and not over-scrupulous secretary, and a glowingly-written prospectus, were alone needed to secure the necessary capital. Men who were doing well in the roomy legitimate business, and on the high road to competency, with that inordinate haste to be rich which is so inimical to ultimate success, drained their business of the necessary capital in order to purchase shares in limited companies, of which they knew nothing and against which they were repeatedly cautioned.

When the coal and iron "fever" was raging we over and over again warned our readers against this illegitimate trading. We often "sounded the alarm," urging that "all that glitters is not gold." All, however, to no purpose; our warning voice was unheeded. It failed to read the then signs of the times; but the experience of the past two years has proved we were right, and hundreds, if not, indeed, thousands, have now to regret that they risked their hard-earned cash in concerns which have proved the most signal failures. But the "mania" (for it was nothing less) spread from the capitalists and the commercial and trading communities to the working miners. The spirit of discontent with the high wages they were receiving was easily fanned into flames by the suicidal policy advocated by the leaders of Trades Unions.

Mr. HALLIDAY is well known to have suggested that co-operated



of leaving the miners themselves was the great heal-all for all the wrongs, real or imaginary, of the collier. In many instances the advice of Mr. HALLIDAY was acted upon, but co-operative mining is a complete and signal failure. A few years since the miners of South Yorkshire purchased a mine at a sum of between 70,000 and 80,000. The mine was to be worked upon the co-operative principle, the members personally receiving the benefit. For a time—a very short time—all went well; but the day of reckoning, of severe trial, came, and it is now acknowledged that the mine has been a losing concern for some time past, with, it is alleged, water in the shaft. Matters have assumed such a serious complexion that a meeting of directors and debenture holders was held a few weeks since at Derby, when it was stated that the colliery had never paid since it came into the hands of the association, and it was decided to discontinue the whole of the colliers without delay. The same plan of co-operation has been tried in South Wales, and with the same results. The Llanelli Colliery, near Pontypridd, was purchased by the operative colliers some time since, but the funds were quickly exhausted, and the colliers were brought to straits which they never experienced when working under the old regime—i.e., when a responsible proprietor, whose whole interests, pecuniary and otherwise, were bound up in the success of the colliery, and the welfare of his men.

We quote these two cases not because they are by any means isolated instances, but because they illustrate the truth of what we wish to impress upon our readers. Co-operation does not answer in the practical working of collieries, and experience has proved that the same remark will apply with equal force to ironworks. The working collier, puddler, and furnace-man may feel interested in turning out the largest yield of coal or iron, but much more than this is necessary for success. The principal causes of failure in all co-operative undertakings is the fact that the managers and directors have not that great pecuniary interest in the affair as to induce them to devote their whole time and energies to its successful working; or, if they do, they are tempted to sell at unremunerative prices. Of course, there are exceptions to every rule, and some of our co-operative undertakings are ably managed, and yield good returns. One of the first essentials for the success of any large works is that one able practical man should have autocratic authority, and if possible made personally interested in its success.

Co-operation in connection with our mining operations and our other staple industries has now been tried, and in the day of trial it has failed. The principle has utterly failed, ending in many instances in the most complete and signal collapse. These failures should teach commercial men that it is unwise to drain their business for adventures of which they know nothing, and should show operative miners and puddlers that "all is not gold that glitters"—that the owners of collieries and ironworks have expenses and anxieties of which the men themselves never can have experience or knowledge. The true interests of the owners of mining properties, of ironworks and such other extensive undertakings, and their successful development, is not promoted by ephemeral bubble companies, but in the steady and persevering determination of the individual firm itself, which in days of yore proved so eminently successful, and which will still do so in the future, when the modern system of co-operation shall have passed away.

**GOLD MINING IN VICTORIA.**—The statistics for the quarter ending June, 1876, shows that there were employed in alluvial mining 16,637 Europeans and 11,046 Chinese, and in quartz mining 14,678 Europeans and 92 Chinese, making a grand total of 42,453. The approximate value of the mining plant in use was 2,032,338. The number of square miles of auriferous ground actually worked upon was 1105; and the number of distinct quartz reefs actually proved to be auriferous was 3226. The total quantity of gold got during the quarter was—alluvial, 93,924 ozs.; and from quartz, 155,357 ozs., equal to 249,281 ozs. The quartz yielded at the rate of 11 dwts. 24 grs. of gold, 248,197 tons crushed having produced 136,631 ozs. The quartz tailings and mullock yielded at the rate of 2 dwts. 16 grs. per ton, 7685 tons having produced 1032 ozs. The pyrites and blanchettes operated on yielded at the rate of 2 ozs. 8 dwts. 20 grs. per ton, 17594 tons producing 4297 ozs. The technical reports from the various mining surveyors and registrars show that in many cases good returns are being obtained.

**BRITISH ENTERPRISE IN CANADA.**—We learn that Mr. C. Leslie, M.A., Ins. C.E., F.C.S., Civil and Mining Engineer, late of Bartholomew House, London, has been appointed general manager of the mines and works of the Canadian Copper and Sulphur Company (Limited), situated at Capetown, Province of Quebec, Canada.

**EXPORTS OF STEAM-ENGINES.**—The value of the steam-engines exported from the United Kingdom in September was 143,924, as compared with 198,244, in September, 1875, and 260,050, in September, 1874. The aggregate value of the steam-engines exported in the nine months ending Sept. 30 this year was 1,470,531, as compared with 2,028,970, in the corresponding period of 1875, and 2,300,208, in the corresponding period of 1874. Our best customers for steam-engines this year have been Russia, Italy, British India, and Australia. The value of the steam-engines shipped to Russia in Sept. 30 this year was 121,324, as compared with 266,884, in the corresponding period of 1875, and 262,471, in the corresponding period of 1874; to Italy, 142,584, against 119,641, and 158,695; to British India, 174,607, against 299,982, and 234,816; and to Australia, 161,664, against 189,627, and 209,425. Our exports of steam-engines to Germany have considerably declined this year.

**THE NEW RIVER COMPANY'S SHARES.**—The large room at the London Mart was crowded on Wednesday, in the sale, by Messrs. Edwin Fox and Bousfield, of shares in this undertaking. One-third of a King's Original Share was first submitted, and after a spirited competition realised 3135s., or at the rate of 91,050s. for an entire share. The speciality of these shares is that they are a freehold property, and even a fractional part confers votes for the council in which the company's estates are situated. Twenty-nine of the New Shares (70s. paid) were next offered, and were all sold at 315s. and 315s. These are the highest prices ever obtained, of a considerable increase on those obtained by the same firm at their sale in June last, when the King's Shares realised at the rate of 2900s. per share, and the New Shares, with 60s. paid, fetched 285s. 25s. At the early part of this century a King's Share was sold for 7000s., and even at Messrs. Edwin Fox and Bousfield's sale of these shares in 1870, the price of a King's Share was 42,350s., which at the time thought to be remarkably high.

**NEWPORT ABERCROMBIE BLACK VEIN STEAM COAL COMPANY.**—The directors inform the shareholders of this company that the black vein has been struck, and is found to be 10 ft. in thickness, 49 ft., as published in last week's *Mining Journal*. The company's engineer estimated this vein at 8 ft. 6 in., and covering an area of 1290 acres, to yield 11,475,000 tons; this increased thickness adds greatly to the value of the property, and brings up the total quantity of steam coal to 13,500,000 tons. Two other seams have been passed through, computed to yield 7,650,000 tons of coal. A brilliant future should be in store for the fortunate shareholders.

**THE COMBARTON MINE.**—It may not be generally known that North Devon has been annually represented at the civic feast of the Mayor for a considerable number of years past. The representative in question is a "permanent official" of the State, and has been so for nearly 300 years, and should the State continue to exist at all time, is likely to be so for 300 years to come. This "official" has always been on the most intimate terms with the members of the Corporation, and has kissed the lips of many a Lord Mayor, but, though at times brimful of alcoholic liquor, has never divulged a single State secret. I allude to the silver cup, which is the produce of the Combarton Mines, which cup was presented to Sir R. Martin, Lord Mayor of London, and is inscribed and dated 1593. The silver mines at Combarton were worked at a very early period, Camden, writing of them, says:—"The first finding and work-

ing of which there are no certain records remaining." The mines have been several times closed and re-opened, a great quantity of silver has been landed and refined from them, and I believe a company, comprising some very energetic gentlemen, is still at work at Combarton.

#### TRADE OF THE TYNE AND WEAR.

**Nov. 1.**—The main feature in the mineral trade here is still the brisk demand for all first-class coals and coke for export. Most of the first-class collieries on the Tyne will be well employed during the winter. Much attention continues to be given to the small coal question. When hard steam coal is produced it is evident that it is quite possible to reduce the make of small coal very materially, and this is of the utmost consequence, as the small coals produced by these works are of no commercial value. At the present moment these small coals are sent by rail in some cases 15 miles, and sold at 3s. 6d. per ton, little more than the rail cost. The demand for manufacturing coals, coke, and all inferior coals is far from sufficient to keep the works going, and the ironworks generally, that is the finished ironworks, are only very moderately employed. New gasworks have been recently completed at Redheugh-on-the-Tyne. The works are on a large scale, and are fitted up in every respect on the latest modern plans. They occupy 25 acres of ground, and when in full work will consume 200 tons of coals per day. The holder is the most prominent object, and its capacity is 1,000,000 cubic feet. The Chartered Gas Company, in London, have holders twice the size, yet it appears that the Royal Society in 1814 advised the Government to restrict the size of gasometers to a capacity of 6000 cubic feet. This shows very clearly the progress made since that time in gas making. These works have been constructed on the model of the Beckton Gasworks, in London, which are the largest works of the kind in the world.

There was a good attendance at Middlesborough on Tuesday, but the general tone of the trade was rather quiet. Makers are naturally trying to keep up their prices, but merchants and others have been selling on easier terms, anticipating that there will be shortly lower prices current. The late improvement in the trade must now be confessed has not been well maintained. The general quotations are No. 1, 50s.; No. 3, 46s.; No. 4, 43s. Forge iron is in less demand. There has been a steady delivery of pig metal for shipment, but on this score a reduction may soon be expected to appear.

Much dissatisfaction has been expressed amongst ironmasters and coalowners at the decision of the North Eastern Railway Company not to further reduce the rates in mineral traffic which were advanced in 1872 so very seriously. The trade claim that with the present depression no part of the advance should be retained. In the finished iron department there is no appreciable change to note either in demand or price. There is not much doing, except in plates and other shipbuilding iron, and also the bar trade. The main trade of the district, that of railway iron, keeps in a very depressed condition. The coal and coke trades are not much altered, though the approach of winter has slightly hardened some classes of coals.

**NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS.**—A general meeting of members will be held, on Saturday, in the Wood Memorial Hall. After the routine business and the election of members is disposed of the following papers will be read:—"Further Notes on Gases Exuded by Different Welsh Coals," by Prof. A. Franz Marrioc, M.A.; "Some Remarks on Mr. E. F. Boyd's paper on the Coal Measures and Oil Produce of the United States of America," by Mr. G. C. Greenwell. The following papers will be open for discussion:—"On the Application of Counterbalancing and Expansion to Winding-Engines," by Mr. M. Daglish; "On the Larger Divisions of the Carboniferous System in Northumberland," by Mr. G. A. Lebour; "On the Low Wall Works at East Hutton Colliery," by Mr. W. O. Wood. A full report of the proceedings will be given in next week's *Journal*.

#### REPORT FROM CORNWALL.

**Nov. 2.**—The manner in which the smelters dropped the tin standard, with far less consideration than the fashion in which they raised it, was not among the least absurd of the consequences of the recent panic, though certainly it fell short—being a profitable transaction from the smelters' point of view—of the absurdity of those good folks who rushed into the market to get rid of their gas and water shares, because foreign bonds went down at a time when everybody was asking what money could be invested in. However, since last week the smelters put up the standard 3s., as against their drop of 2s., we must congratulate ourselves that matters have been no worse, and that the career of improvement has not been checked for a longer period. Still there is very little doubt that present prices very inadequately represent the real value of the metal. If the rise was 10s. instead of 3s. it would not be a bit more than, as far as we can see, the circumstances would fairly admit, and that being so we may look for further advances ere long. There is a good deal of money now to be made by wise investment.

The Royal Cornwall Geological Society, which has reached its sixty-third year, continues to flourish, and its annual meeting, held under the presidency of Mr. W. W. Smyth, F.R.S., was peculiarly interesting. The late Mr. W. J. Henwood, F.R.S., left the society a legacy of 1000s., and the financial condition of its affairs is such that the treasurer has been enabled to invest that amount. Moreover, during the year a curious illustration was supplied of the high value set upon the work done by the society. In the society's Transactions Mr. Henwood was the most extensive and valued contributor. At the sale of his library a set of those Transactions brought no less a sum than 16s. The museum of the society has been extended, and the work of arrangement carried forward. Nor has practical work in other directions been wanting. A prize of 5s. was offered for the best essay on any mine or mining district of Cornwall. This was won by Messrs. H. Eddy and J. Bennett, of Pendeen, with an essay on North Levant. Next year Mr. Basset, of Tehidy, will offer a similar prize under like conditions. The papers read at the meeting included, "On the occurrence of Tin in an Elvan Course at Wheal Jennings," by G. Seymour; "Remarks on some Tin Lodes in the St. Agnes District," by Dr. Foster, F.G.S.; "The Sand and Clay Deposits at St. Agnes Beacon," by B. Kitto, F.G.S., and A. Davis; "Notes on the Hensbarrow Granite District," by J. H. Collins, F.G.S." Want of time, however, prevented full justice being done them.

Dr. Foster, with regard to the tin lodes at St. Agnes, said they could now be studied at greater depth than formerly; other lodes were, in some cases, being wrought; and there was a great want of cross-sections of the lodes in previous descriptions of the mines in the district. Penhalls Mine, situated on the edge of the cliff just east of Trevenance Cove, was singularly interesting on account of the numerous "heaves" which occur there. Wheal Kitty, which lies to the south of Penhalls Mine, was mainly worked on one lode—the Kitty lode. On his last visit to this mine he discovered some specimens of apatite, a mineral which had previously been found at only one mine in the parish—Wheal Kind. After describing the lode at Wheal Coates Dr. Foster referred to Cligga. The section that could be seen at low water on the western side of Cligga point was one of the most remarkable in the county. Of the well-known men who had described the sections, Prof. Sedgwick seemed to have had the most correct idea, as he described the granite as being intersected by numberless parallel metalliferous fissures. Dr. Foster described the section at Cligga as magnificent. He doubted if any country in the world could exhibit a section so full of interest to the student of tin lodes. He supposed the granite to have been once in a soft state, and whilst in that condition to have broken through the kyllas. Whilst cooling it contracted, leaving a series of small open fissures. These were filled by vapours and solutions which proceeded from below, and not only were the minerals deposited in them, but the same agents decomposed the granite walls bounding the fissures. The curvature of the fissures was most extraordinary—due, perhaps, to the position of the kyllas, which must have covered the granite entirely.

The paper of Mr. Collins was most able and elaborate, and dealt in minute detail with the phenomena of the Hensbarrow granite dis-

trict—one of peculiar interest, inasmuch as it is therefrom that the chief supplies of china-clay and china-stone are raised. Mr. Collins stated the indications of the granite to be of a very complex character. Wherever the granite and the slate had come into contact the latter had been altered. There was no trace whatever of glacial action in the district.

Wheal Jennings, referred to by Mr. Seymour, was formerly known as Parbola. There is no lode, but the sett is traversed by a powerful tin-bearing elvan course, which traverses the country generally in an east and west direction. The general character of the deposit approximated somewhat to that of the German Stockwerke, consisting of an infinite number of small veins running through a now stratified rock, the whole body of which was traversed by them. It differed, however, from true Stockwerke, inasmuch as the tinbearing branches followed one arbitrary direction. Such a deposit, however, was by no means without precedent in Cornwall, and the names of Castle-an-Dinas at St. Columb, the Terras Mine at Grampound Road, and the celebrated Wherry Mine in Mount's Bay might be quoted as occurrences of a similar nature. The tin-bearing elvan course in question traverses the country in a generally east and west direction, passing through the South Rosewarne and Parbola setts, and running east to the Trevoole elvan quarries by the side of the Helston Road, where some fine stones of tin had been obtained from it.

Possibly the author of the very interesting notice of the deep mines of this country, which appeared in last week's *Mining Journal*, may have intended to confine his remarks, so far as the United Kingdom is concerned, to the North of England, in which case there would be little, if any, need to supplement them. But if they were intended to be general the omission of Cornwall in his notices and calculations is rather a serious one. It is quite true that there are one or two mines in the North deeper than any in the West, but they are very few, and we question very much whether the average depth of the mines in our chief mining districts is not greater than the average of those of any English coal field. There are dozens of mines in Cornwall more than 500 yards in depth, several above 600, and even 700 yards is by no means unknown. The custom of expressing the depths in fathoms may mislead the uninitiated, but, of course, cannot have misled the gentleman in question, though he may have overlooked another point—the fact that the depth of a Cornish mine is not calculated from the surface, which in such a hilly country varies very much, but from the adit level—the point at which the water raised is discharged. This fact causes the actual depth of a mine to be often much under-estimated, as the adit level may be 20, 30, or even 40 fms. below the point at which the sinking began, and the figures currently quoted as the depth of a mine be that much short of the depth actually attained. Except in a few instances on the Continent, the Cornish mines are the deepest metalliferous workings in the world.

#### REPORT FROM THE NORTH OF ENGLAND.

While there has not been any real change in the iron trade of the Cleveland district during the past few days, it is nevertheless evident that there is not much likelihood of matters mending materially until the spring. The quantity of pig-iron now produced has fallen off considerably as compared with a month or six weeks ago; nor is there any symptom or sign of an increase in this department. It is all but a foregone conclusion, although the returns are not yet available, that not only will it be found that the make of pig iron for the month of October has fallen off, but that this result has been accompanied by a decline in the shipments, especially coastwise, and an increase in the stocks of iron on makers' hands. Scotland in particular has diminished her demands upon Cleveland, and appears to be finding a more ready and remunerative market for her own iron. The close of the navigation season is now at hand—in some cases it is practically an accomplished fact—and hence the requirements of shippers on continental account are not so heavy or so urgent as they were. There is no mineral worth speaking of in local consumption, but in some cases rather the reverse, and putting all these facts together it will be sufficiently evident that the time is not opportune for an improvement in the iron trade of the North of England.

At Tuesday's market at Middlesborough there was a fair amount of enquiry, but business generally was rather contracted, as enquiries do not, except in a very few cases of trifling moment, lead to orders. Quotations, however, are pretty firmly maintained, makers who can afford to hold believing that if not sooner they will at any rate be able to command better rates in the spring. Some weak holders who have been intimidated into the belief that they made a mistake in buying iron some weeks ago at 1s. to 1s. 6d. less than current rates are, however, anxious to sell out at 6d. to 1s. advance, and this rather had the effect of weakening the market. Foundry iron is in pretty good request. Forge iron is not so much enquired after.

A great deal of disappointment, and not a little resentment, has been evoked by the refusal of the North-Eastern Railway Company to accede to the application made a fortnight ago on behalf of the Cleveland Ironmasters' Association and the North of England Iron Manufacturers' Association for the reduction of the mineral rates to the level of 1871, when an advance varying from 10 to 15 per cent. came into operation. The directors of the North-Eastern Railway have not assigned any reason for their refusal. It is, however, generally understood to be in consequence of the continued increase of working expenditure. That increase is still existent in every branch of outlay, and although in respect of the cost of locomotive power there has recently been a large reduction, there are other items of cost neither so elastic nor so liable to fluctuation. It is, I believe, a fact that the working expenses at the present time are about 53 per cent. of the total receipts of the company, or fully 9 per cent. more than the percentage of working cost in 1870. This is, of course, a very serious difference, and one that the directors consider themselves bound to provide for as far as possible by allowing mineral rates to be maintained, at least in the meantime. The freighters, on the other hand, distinctly urge that it was understood that the increased rates when they were imposed were not only to be temporary but entirely coincident with the duration of the increased cost of fuel, and out of which circumstance they originated. There can be no doubt that a reduction in the mineral rates now charged would be of substantial service to the iron and coal trades, and from their own point of view they have a good right to claim it, but while the working expenditure absorbs 53 or 54 per cent. of the total receipts of the company, the directors, judging from their policy up to the present time, are little likely to give heed to the claim.

I understand that the directors of the Darlington Iron Company are about to make arrangements for holding a special meeting of the shareholders in order that the affairs of the company may be enquired into. Mr. Joseph Dodds, M.P., the vice-chairman of the company, has addressed a long letter to the shareholders, in the course of which he justifies himself from certain assertions made by Mr. W. E. Surtees, one of the shareholders, and points out that the company, although lately suffering very considerably from the current depression, is in reality in a much better position than the majority of such firms—that is, firms exclusively engaged in the rail trade of the North of England. The directors, in fact, profess to be anxious rather to court than to shun publicity, and I am informed by one of their members that the present agitation will be found to have been totally without just cause or excuse. However, we shall know in a few days what the actual position of the company is. A meeting of the creditors of Messrs. Thomas Charlton and Company, colliery owners and ironstone mine proprietors, and of Mr. R. H. Charlton, of the Stranton Works, West Hartlepool, was held at Darlington on Monday, when it was resolved to accept a composition of 7s. 6d. in 1s. in the former and 10s. in 1s. in the latter estate.

There is really no improvement in the finished iron trade, fully a thousand puddling-furnaces being now laid off between the Tees and the Tyne. Plates continue to be a good deal enquired after, and it is believed that the spurt which has taken place in the shipbuilding trade will be maintained. Shippers are apparently anxious to take advantage of the opportunity now presented of buying plates at a cheap figure, and if railway companies could only see things



in the same light, and become persuaded that it would be to their ultimate interest to make immediate purchases, there would soon be a better tone and greater confidence. So long, however, as the great railway companies fight shy it is hardly to be expected that those who enter the market under less legitimate circumstances will display a spirit of confidence and hope.

There is no trade doing much better than that of iron founding at the present time. On the Tees the new foundry at Port Clarence, belonging to the Anderson Foundry Company—a branch from the Glasgow establishment of that name—is turning out nearly 600 tons of railway chairs and sleepers per week, and the foundries of Messrs. Head, Wrightson, and Company, at South Stockton, of the Norton Iron Company, and of Gilkes, Wilson, Pease, and Company, are each doing a fair stroke of business at prices which are fairly remunerative.

Unfortunately the coal trade is still far from participating in the slight modicum of improvement visible in some other departments of Northern industry. The net average price of all the coals vended in the county of Durham is now within 5½d. per ton of the price of 1871, while wages and all other items forming the cost of production are still considerably above the cost of that year. It is not remarkable, therefore, that the profits of the coalowners should be very limited, many of them, in fact, carrying on business at an absolute loss. There is still a very languid demand for manufacturing coal and coke, but the steam and gas coal trade is so active that most of the collieries employed therein are making full time.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Nov. 2.—The mills and forges throughout South Staffordshire have been only partially employed during the week in any but those instances in which the quality of the iron produced is exceptionally high. The market is generally still looking for concessions from makers, and yesterday in Wolverhampton and to-day in Birmingham there was a less unyielding spirit evinced by the finished iron makers who are in want of orders. For some time past there has been dread lest the action of the colliers should force the colliery proprietors to advance the price of fuel, and the ironmasters have deemed it wise to protect themselves. That uncertainty, however, has now been removed, and though prices did not show any marked declension, still instances were observable in which there was less reluctance to consider consumers' offers. Here and there some kinds of finished iron might have been got at half-a-crown per ton under the quotations of a fortnight ago. Pig-iron is scarcely more than a drug so far as it relates to new sales. The make is less than half of the total capabilities of the furnaces. From other districts the arrivals keep up, and to an extent which makes them in excess of the current requirements of customers. Requests are now pretty frequent that agents would delay deliveries. Quotations tend steadily though slightly in consumers' favour for all but the best qualities of this and other districts. Foundry iron is in less request. Cinder pigs are quoted from 2½ to 2½d. to 2½d. to 2½d., though it is understood that the iron may be got for a little less money. The coal market is but dull. Decreased quantities are leaving the Cannock Chase district, and there is great competition for the orders to be placed in the ironmaking localities, and for export from East Worcestershire. At the moment a little winter weather is inducing a slight spurt.

The Coalmasters' Association conceded the men's request, and at Dudley, on Monday, held a meeting of members to receive a deputation of delegates. Before the delegates were admitted the Association fully discussed the situation, and came to the conclusion that the trade was not in a position to hear of a rise of quotations and this was communicated to the delegates when they were admitted. Of course, the delegates made the most of their case, but figures were quoted by Mr. Fisher Smith, the chairman of the Association, which were conclusive that the position of the men was much better than at earlier times with which the men would have compared the present. It may be well hoped that the question is now for some time settled.

The Willingsworth Colliery Company held their first meeting at Walsall on Monday. Pumping had not yet begun, but it was believed that the lifts were capable of pumping nearly three-quarters of a million gallons of water per day, and the Mines Drainage Commissioners had offered terms for pumping which, if they should be accepted, would as nearly as possible recoup the company the cost of working the engines. Drawing engines were being put down, and coal and slack to work the engines were being obtained in advance of the unwatering of the chief mines.

Immense difficulties from the copious inflow of surface water have for more than 15 months been experienced in the new sinkings at the Witley Colliery, near Cradley, but by coffering and the erection of a pair of 25-in. cylinder engines the back of the difficulty has been broken, and it is likely that the thick coal will be reached in a little over half-a-year. The estate comprises 123 acres.

Colliery and ironworks property has not yet begun to improve in value, but such concerns as Muntz's Metal, Railway Carriage and Wagon Building, and the like, are still creeping up.

North Staffordshire is a little more active this week than last. The potters, though sadly wanting foreign orders, are doing well on home account, and are, therefore, better customers at the collieries, where for ironworks purposes there is a trifle of improvement, the bar branch being a shade better at the mills, but foreign specifications are still, however, sadly needed for plates.

#### REPORT FROM DERBYSHIRE AND YORKSHIRE.

Nov. 2.—The present year has been a most disastrous one for collieries conducted on co-operative principles, as well as for a great many worked by limited liability companies. The co-operative principle has been very successful so long as the associations bought and sold, and became mere distributors of articles of consumption, the same as ordinary shopkeepers or dealers; but when they entered upon the task of becoming producers in the first instance, then they have so far signally failed. Buying at a certain price and selling at a profit is one thing, when you know that you have a large number of consumers that are bound to deal with you; but producing a certain article, and having to go into various markets and compete with others who, in all probability, know a great deal more about the business, is another. This the conductors of co-operative collieries have discovered, and the discovery has been a most expensive one to the co-operators. With a loud flourish of trumpets we were told the working miners had the power of elevating themselves into colliery owners, whilst in the first instance, having a colliery or two of their own, they would be able to raise the wages in the various districts by showing what very large profits ordinary colliery owners were making. Well, they have had the opportunity of showing what could be done by co-operation for improving the position of the miner; and, so far as we can gather from the reports relative to Monkwood and Shirland Collieries, the men were expected to work for less wages than were paid at other places, whilst the upshot was that after a remarkable short season those who were to be advanced so very high in the social scale by subscribing towards the purchase of a colliery were coolly informed that all the money was sunk and lost. Such is the history of co-operative colliery companies so far.

With respect to the companies started on the limited liability principle during the last three or four years—and their number is very large—they have been getting "smaller by degrees and beautifully less." One of the latest additions to the number is that of the Wharfedale Woodmoor Colliery, situated a short distance from Barnsley. The share capital is understood to have been 50,000l. Besides that sum, and a considerable amount raised by mortgage, all has been swept away, and the shareholders have been informed that their interest in the colliery has entirely ceased. The Industrial Coal and Iron Company, now engaged in sinking to the Silketon coal, near to Sheffield, have the prospect of going into liquidation, a petition to that effect having been lodged with the proper officials, the hearing being fixed for this day (Saturday). Many of the unfortunate shareholders cannot understand how it is that their once prosperous looking property should have collapsed in the way it has done. They are bewildered with a collapse which ordinary lookers-on from the first saw was inevitable. But the simple facts are that men with more or less capital rushed without consideration into a danger which, if they had given a little thought to, or had consulted those who were practically acquainted with collieries, they would have avoided. Almost fabulous sums were given for mines that could scarcely realise a profit when coal was nearly three times the price it now is. Many of the deluded believed that coal would advance in value instead of coming down, as it has done. Mines that were not worth more than 3000l. or 4000l. sold for eight or ten times those sums. In one instance a colliery which was sold for 28,000l. exactly a year afterwards was transferred to a company for no less than 225,000l. Surely, then, it is not to be wondered at that such companies not only do not pay, but end in the entire loss of the capital subscribed.

Business doing at the ironworks at the leading establishments in Derbyshire is still tolerably good, both as regards pig and manufactured iron. The output of the blast-furnaces is kept up to the

average, and a considerable tonnage of ironstone continues to be imported from Northamptonshire, and the foundries have been kept fairly going in pipes, stoves, and grates, as well as in other castings, whilst the Bessemer works continue to be well employed in rails. House coal is in brisk request, and rather more so, being the domestic coal, more especially in the Silketons, which hold the second place in that market to the best Newcastle Wallsend only. Prices, however, have now reached the highest point for the year, although there has been scarcely any change at the pits. A good deal of steam coal is being sent away in the carrying out of contracts. Steam coal has undergone but little change, the demand during the winter months being considerably less than in the summer. In slack and smudge only a moderate business is being done, although prices are rather low in comparison with what is charged for the best coal. In the lead mining districts matters appear very quiet, and there are a good many places that were opened out during the last two or three years that have been abandoned, many from the want of capital on the part of those who commenced them, and others from the unprofitable character of the ground, as well as from other causes; a few there are that are going on very well, especially those worked by the well-known firm of Wess and Son, whilst those in the hands of companies do not appear to make any marked progress.

Some of the Sheffield trades have improved of late, so that the latter part of the year will turn out considerably better than the early, or indeed any part of it. In the heavy branches more is being done, and the armour-plate mills are now busier than they were two or three weeks ago, but it is understood it is principally on account of our own Government. Light plates, for ships and boilers, keep the mills fairly going, but there does not appear to be much change with respect to ordinary iron rails or railway material, the demand being somewhat moderate. Spring makers are rather better off, and the Universal Spring Company, it is said, have commenced operations, and are likely to do an extensive trade. Most of the Bessemer houses are doing very well in rails, and the leading and largest establishment we have engaged in the production of malleable castings, plain and ornamental, has been doing very well for some time past. A little improvement has to be noted with respect to best qualities of table and spring knives. The foundries have been going on favourably, and the men have been well employed, there being a good turn out of colliery tubbing, valves, fittings, cor-wheels, cooking ranges, stoves, grates, and builders' castings generally. In the Rotherham district the works are favourably off 'or business, and there is a rather brisk demand for some descriptions of brass castings, for which the town is noted.

The Coal Trade of South Yorkshire is much as it was, and the business doing in household qualities is brisk, the quantity being forwarded to London being about up to the average, more especially in Silketons. Steam qualities have undergone very little change, but the time has now arrived when the shipments to the North of Europe from Grimsby may be said to have closed for the season, for few would be inclined to load for a voyage to the Baltic in the expectation of finding it free from ice. In other descriptions of coal there has been no change.

#### REPORT FROM LANCASHIRE AND CHESHIRE.

Nov. 2.—It is always extremely difficult to ascertain definitely on the first day or two of the month whether the changes which have in the previous four weeks been hovering over the market have really come to pass. At the present time apparently there has been no general increase of prices, but there are indications that, at any rate, list quotations will be insisted upon, and it would not surprise anyone if before many days are over an advance all round was announced. For higher classes of coal there is a very good demand, and even common coal is not so unsaleable as it was a few weeks ago, though it is still somewhat of a drug. The least hopeful sign about the markets at present is in the very moderate demand for engine fuel, and in this department there is not much likelihood of an advance of price. The coke trade is mending, but the prices have not been seriously altered. The best Lancashire cokes fetch about 22s. 6d. per ton, but the quotation for Durham is 20s. to 22s. There is no change to notice in the iron trade. There are not many large orders stirring, and the position of affairs generally does not show much improvement.

The miners of Lancashire and Cheshire have united the various districts into which they have hitherto been divided and formed one large association. The first public act of the association has been to ask for an "advance of wages to the amount which will make them equal to those of May last," and the request is grounded on the improved state of the coal trade.

The Manchester Geological Society held its annual meeting on Tuesday, and a report of the proceedings will be found in another column of this week's Journal.

The first sod of the Wigan Junction Railway, a description of which was given in my last report, was cut on Friday by the Home Secretary in presence of a very large company.

#### REPORT FROM NORTH WALES.

Nov. 2.—The recent increased activity in the coal trade has passed away, leaving business as dull as before. The general complaint is that there is not half the amount of business doing that there should be, neither for export or home consumption. The best trade in North Wales now and for some years past is the slate trade. In this the Principality enjoys a monopoly, for while here and there in similar geological formations elsewhere slates are found, they cannot at all compare for thinness, fineness of material, and quality with those produced in North Wales. Hence, as a correspondent remarked in the Journal last week, the market is the wide world. Taking the whole of the Principality of Wales, the production is far from being equal to the demand. As an example, there are at the present time from 40 to 50 vessels waiting for cargoes at Portmadoc, and scarcely enough of slates on the wharves to load one-tenth of the number. Quarries are being developed, but not in anything like the number necessary to overtake the demand, and it would be desirable if some of these which are now restricted for want of capital could pass into the hands of men able to work them on a scale commensurate with their capabilities.

#### REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

Nov. 2.—There is again nothing of a reassuring character to report of the staple trades this week. Very few clearances have taken place, and the position of the iron industry—especially the rail department—is most unsatisfactory. It is true that the Rhymney Iron Company has received a tolerably good order for rails; but requirements in this direction are very slow in coming to hand. The demand for bars is also extremely limited. To the Baltic ports there have been some small clearances made, as well as to Italy; and these are about the only shipments that have been made during the week. Bad news comes to hand from Downais. It is well known that these works have been kept going while other large establishments in the vicinity—notably Cyfartha—have been standing idle. Some time ago notices were given to terminate contracts to both iron and steel employers, and this notice has now expired, and the result is that some 500 or 600 men will be thrown out of employ. With winter close at hand, the prospects of the employees are anything but cheering; but it is believed that if the men consent to go to work on the long-time system, they may return to their employment. It is also announced that a reduction of 5 per cent. will be enforced in the wages of "tradesmen" employed at Ebbw Vale. The steelworks now present a contrast to iron-making establishments, but here business is not so brisk as could be wished. The Tin-Plate Trade is unaltered. The strike at Briton Ferry has terminated, the men returning work at a reduction.

An important case, and one of interest especially to ironmasters, has been tried at the Glamorgan Quarter Sessions. It was an appeal by the Aberdare and Plymouth Iron Company against the overseers and churchwardens of Merthyr. The Union Assessment Committee have recently raised the rating of several of the local works. In the case at issue the rates had been about doubled, and as the establishments belonging to the company are at a standstill they, in common with other local firms, felt aggrieved. Evidence was given by Mr. E. Williams, M.L.C., of Middlesbrough, whose evidence showed the extremely depressed condition to which the iron industry—especially the finished branches—has been reduced. Mr. W. Menelaus, manager of the extensive Downais Works, was also examined. He spoke of the collapse of the American demand, and said that there was no prospect of a revival in the iron trade. The result of the case was that an arrangement was come to, whereby the assessment of 12,000l. was reduced 800l. "warehouse rental." Truly a most extraordinary finish to the case, and it is no wonder that the Chairman of the Court should have expressed himself in strong terms as to the manner in which the case had been brought forward, and then settled. Other similar cases were adjourned till next Court. The Coal Trade shows but little alteration. Shipments foreign are larger than usual, but there is no change to be noted in prices, the men have already collected 3000l. towards the cost of their side of the Conciliation Board, which has been handed in, but there remains over 2000l. more to make up the amount due. The colliers employed at Wannecoed and Cwm-nantlwyd Collieries, Ystalyfera, have commenced work again at a reduction. They had been on strike for over two months.

LA MANCHE (Newfoundland).—A correspondent has furnished us with the following extract from a newspaper published in St. John's, Newfoundland:—"The usual report from this property which is being rapidly and successfully developed will be found in another column. How valuable the resources of this island are may be judged of by what is going on at Betts Cove Copper Mine at this moment; 300 men are employed, the mine bearing on an average 5s. to 10s. a day, and common labourers from 6s. to 6s. Vessels are being loaded rapidly with ore, which realises

107. per ton in Swansea; 15,000 tons of ore will be exported this year—value 150,000l. sterling. The total expenses of working the mine and freight will not exceed 50,000l. leaving a clear profit for Betts Cove Mining Company for this year 100,000l. Mr. Ellershausen is the managing partner—a man of immense energy, judgment, and admirable business tact. There are only two other partners, one of whom is Mr. Dickson, who is one of the largest capitalists in Glasgow, and much praise cannot be accorded to Mr. Ellershausen for the skill and energy which he has displayed in carrying on mining operations. He is likely to prove one of the greatest benefactors Newfoundland has yet seen in developing the mineral resources. The mode of extracting the ore is by sinking two shafts to approach each other the richer and more abundant the ore become. The point where they meet is still distant, but when reached an enormous deposit of copper is expected, which may last for many years. All sorts of improvements are going forward at Betts Cove. A church and schoolhouse will be completed before the fall, and workmen's houses are in course of erection. One can fancy the benefit of such an establishment to the surrounding population in furnishing employment, creating a demand for lumber, agricultural produce, &c.

HALIFAX.—Nov. 2: The following quotations are from Mr. J. H. Thacker's list:—Halifax and Huddersfield Union Bank, 29½; Halifax Joint-Stock Bank, 10; Halifax Commercial Bank, 24½; London and Yorkshire Bank, 20; Grosvenor's, 11½; Whitworth and Co., 8; Bradford Brick and Tile, A, 16; B, 8; Ripponden Commercial, 10; Yorkshire Hot Water Insurance Co., 22½; Norton Brothers, 8; Heckmondwike Manufacturing Company, 3½; Gooch Shipping Co., 13½.

The Phosphate Sewage Company have issued a report of the shareholders' committee, which recommends that a new company be formed to work the mineral soap trade from the phosphate of alumina produced in the process of deodorisation.

**AN EXPERIENCED CHEMIST AND ANALYST**, who has a good knowledge of METALLURGY (especially of Iron and Steel) and ASSAYING—has had experience in the Wet Copper Process, Refining Lead, and the Manufacture of White Lead—will shortly be OPEN TO AN ENGAGEMENT. Address, "S. F. C.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

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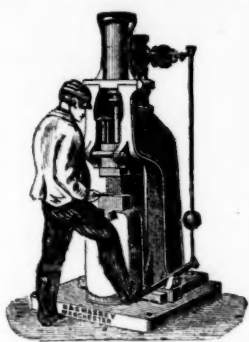
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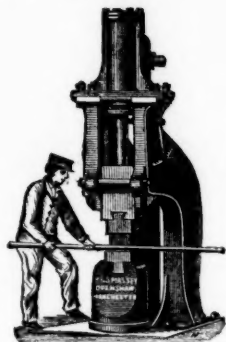
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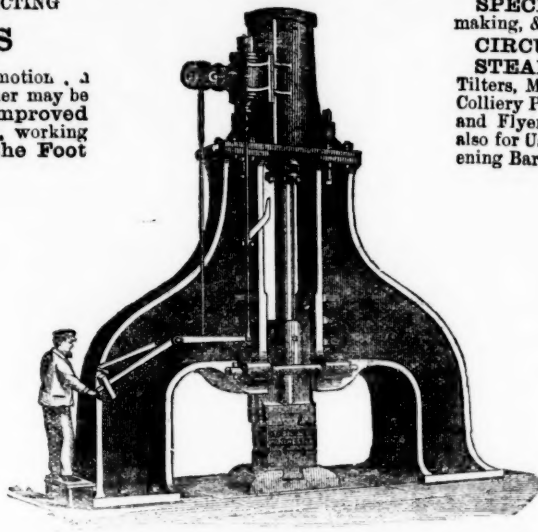
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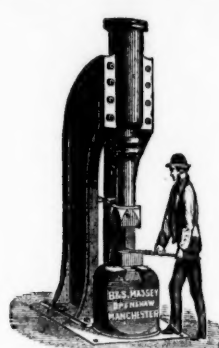
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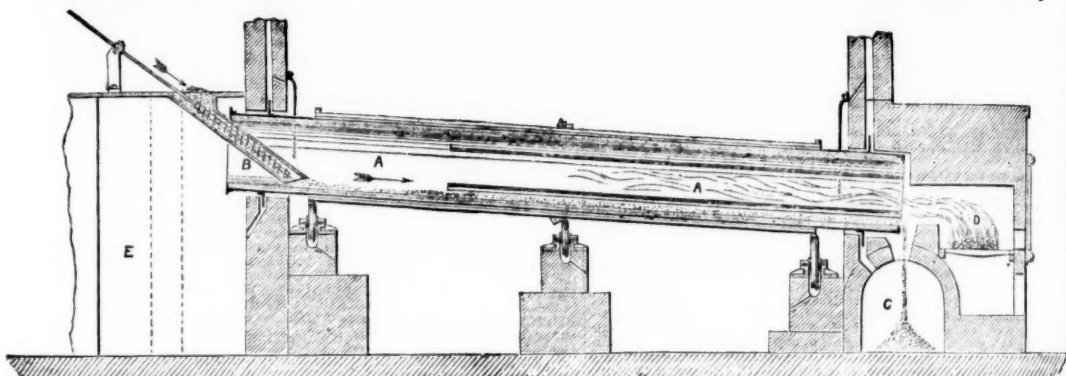
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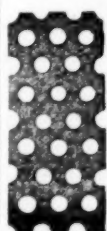
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